SEPTEMBER 15, 1923
VOL. XXVI No. 1

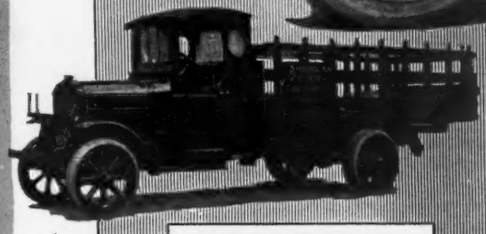
SPECIFICATION TABLE — PAGE 39

THE COMMERCIAL CAR JOURNAL

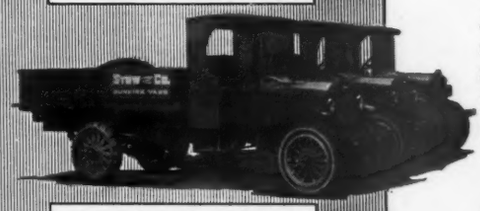
Entered as Second-Class Matter at the Post Office at Philadelphia, Pa.

Bodies for every line of business

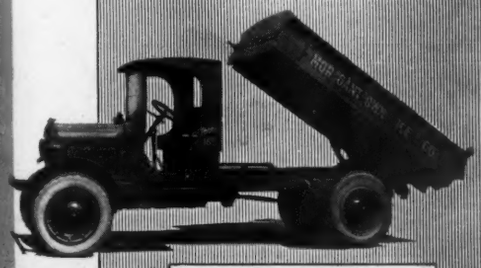
THE STEWART 1-TON TRUCK



Model 10X—3½ to 4 Ton—With Stake Platform Body



Model 9—1½ to 2 Ton—With Stake Platform Body



Model 7X—2½ to 3 Ton—With Under Hoist and Combination Dump Body

Biggest Selling Opportunity in the Truck Field

With the Stewart 1-Ton Truck you undersell any truck of like size and quality by $300 to $700.

Prove that to yourself by comparing the specifications. You will find the Stewart matches trucks costing up to $1800.

And the Stewart 1-Ton Truck typifies the price and quality advantage of the entire Stewart line. Stewarts cost from $300 to $900 less than comparable trucks in all sizes. Eleven years of manufacturing success and financial stability is a guarantee of permanence, offered by few other truck builders.

Some desirable territories are open. Write today. Liberal discounts to dealers in small territories.

Owners Praise Its Economy

Take particular note of the Stewart 1-Ton Truck illustrated above. It gives in service 14 to 17 miles on a gallon of gasoline—10,000 to 12,000 miles on a set of tires—500 to 700 miles on a gallon of oil.

Five bearing crank shaft; multiple disc clutch; electric starting and lighting; truck type bevel gear axle. Body and equipment complete, it costs less than the chassis alone of many trucks it will out-perform and out-last.

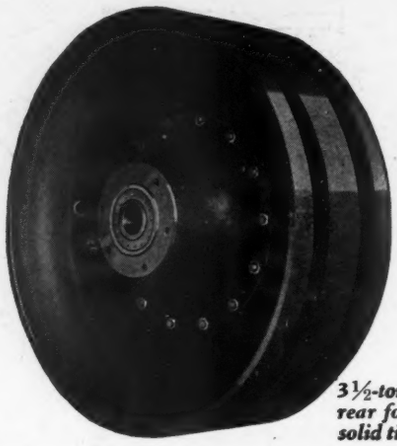
STEWART
MOTOR CORPORATION Buffalo N.Y.
Incorporated 1912

PUBLISHED THE 15TH OF EACH MONTH

CHILTON COMPANY

CHESTNUT & 56TH STS. PHILADELPHIA

5-ton front for solid tires



3½-ton rear for solid tires

5-ton rear for solid tires

CLARK STEEL WHEELS

for Motor Buses

CLARK Steel Wheels are made in our electric steel foundry and machined in the finest truck wheel shop in America.

We build steel wheels—disc and spoke—for pneumatic and solid tires up to six tons capacity, cast hubless or hubs integral.

For light and heavy duty trucks and motor buses.

Clark Special Bus Axles for low hung buses —all capacities.

Electric steel castings for automotive parts

CLARK EQUIPMENT COMPANY
BUCHANAN, MICHIGAN

Clark Bus Axle

CLARK [BEVEL GEAR INTERNAL GEAR OVER HEAD DRIVE] AXLES

Don't Forget the Independent Bus Operator

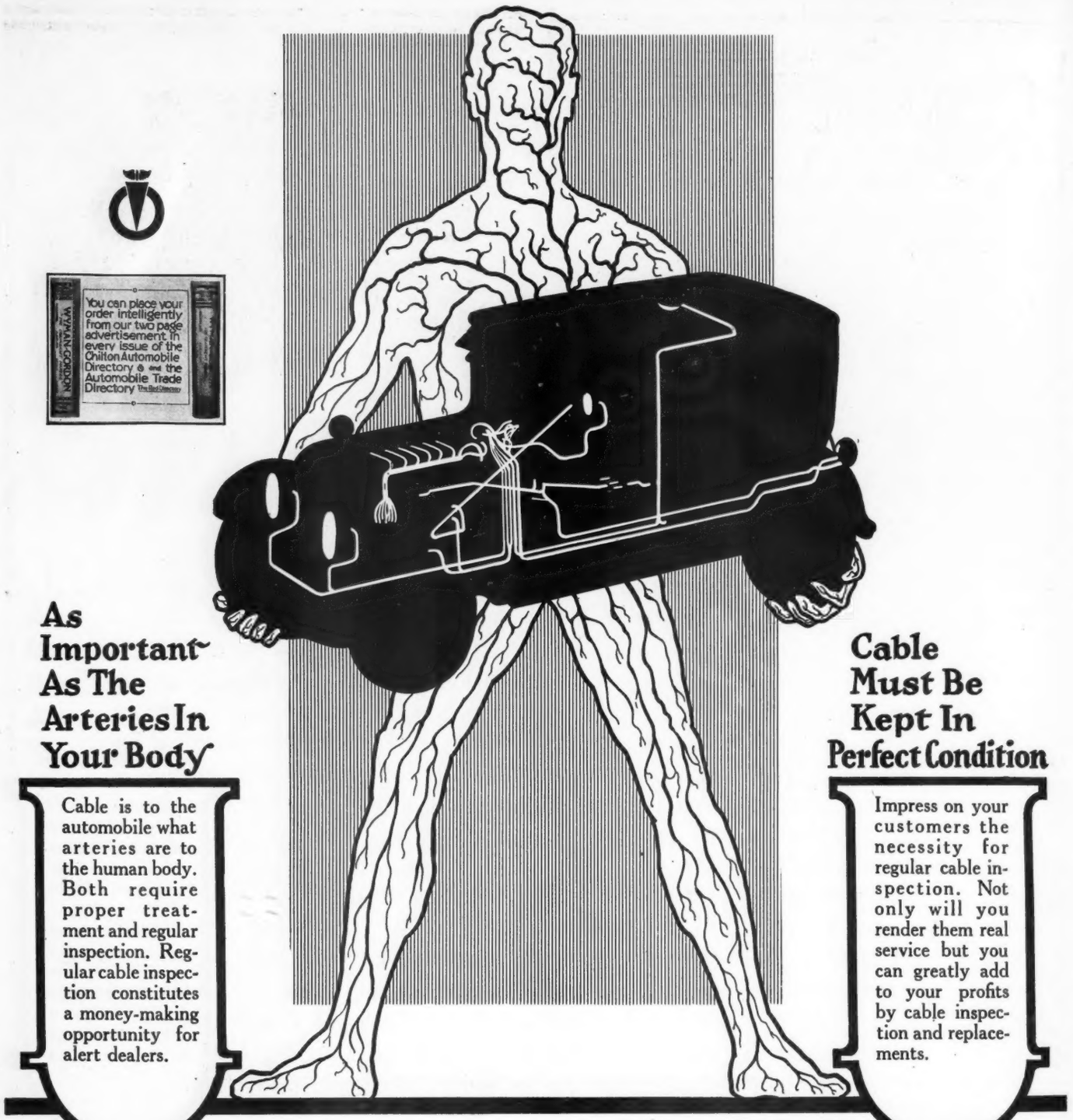
THE Electric Traction companies will eventually become the largest class of motor bus buyers.

They are the prospects of today—the buyers of tomorrow.

The bus manufacturer who has hopes of building up a staple business must necessarily study the needs of this field. The traction companies will be in the market some day with large orders for motor buses. They will need different types and sizes to meet varied requirements for urban service. Before these buses are purchased, however, they must be financed. Securities must be underwritten and incidentally the underwriters usually have the final voice in the selection of the make of vehicle to be purchased. The entire system must be thoroughly planned, and the many details must be worked out before a traction company can go into the market and purchase a large number of buses. In fact, the financing of the proposition is of more concern to the traction officials and the bus manufacturers than the selection of the vehicles. The bus manufacturers who are expecting their share of this business must constantly strive for improvements of a nature that will decrease maintenance costs, rather than build for cheapness.

But, while the traction companies are studying and planning such future developments, the motor bus manufacturer must not neglect to sell the operators of independent inter-urban bus routes who, incidentally, are able to immediately purchase, finance and operate motor buses. The independent bus routes are growing rapidly. They represent the greatest class of bus owners today, and will, perhaps, never be subject to monopolistic control. They represent a market in which every bus manufacturer has an equal chance.

You can place your order intelligently from our two page advertisement in every issue of the Chilton Automobile Directory and the Automobile Trade Directory
WYMAN-GORDON



As Important As The Arteries In Your Body

Cable is to the automobile what arteries are to the human body. Both require proper treatment and regular inspection. Regular cable inspection constitutes a money-making opportunity for alert dealers.

Cable Must Be Kept In Perfect Condition

Impress on your customers the necessity for regular cable inspection. Not only will you render them real service but you can greatly add to your profits by cable inspection and replacements.

Whenever you find cable on your customers' cars, oil soaked, cracked from heat and vibration, worn through from abrasion or eaten by acid fumes, replace it with Packard automotive cable. This superior cable is the oldest and the best on the market. Your use of Packard Cable will clearly indicate to customers the character of your service and repair work.

The Packard Electric Company
Warren Ohio

Packard Automotive Cable

The Standard For Over Twenty Years

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

THE COMMERCIAL CAR JOURNAL

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TABLE OF CONTENTS

	PAGE
Advertisers' Index	186
Bus Descriptions and Equipments	58
Buyers' Index of Reading and Advertising Pages	192
Commercial Car Specifications	39
Editorials	55
New Commercial Cars	72
News of the Trade, Including Personals, Factory Items, Etc.	85
Replacement Table	33

SPECIAL ARTICLES

Motor Bus Industry Ready for Big Expansion	9
A. E. R. A. Convention and Exhibitors' List	10
Where Intelligent Municipal Supervision Has Built Real Motor Bus Service	11
Dependable Bus Service Gains Public's Confidence	16
Keeping Three Thousand Motor Buses in Repair is an Industry in Itself	18
Union Motor Bus Terminal	20
Buses Serve Outskirts of Springfield, Mass.	22
Motor Bus Exhibits at Atlantic City	24
The Wrecking Truck Gets the Business	31
Operate Buses to Give Better Service	32
Tops and Sides for Bus Bodies	51
Portable Salesman Sells Service Equipment	64
How to Make Your Stock Room Pay	65
This Small Town Service Station is Making Service Pay	68
M. A. M. A Activities	91

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Change of Address—Subscribers desiring their address changed should give the old as well as the new

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STANDARD CAST STEEL WHEELS

Quality Wheels for Quality Trucks

Maximum Strength, Minimum Weight. Neat appearance and a record of performance during years of service are reasons why our "STANDARD" wheel plant—the largest in the world—is busier now than ever before.

"STANDARD" wheels cost no more than ordinary equipment. Write for information.

THE INTERSTATE FOUNDRY CO.

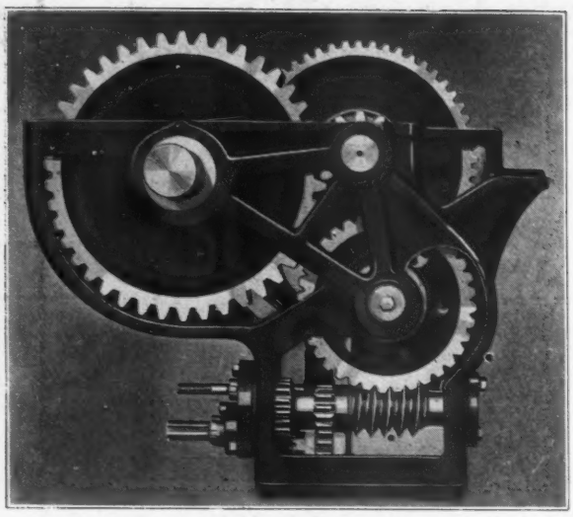
WHEEL PLANT
Clearing, Ill.

HOME OFFICE
Cleveland
Ohio

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

"INSTALL A BORG & BECK AND BE SURE"

BORG & BECK Mechanical Hoist



Sides of dust-proof gear case cut out showing assembly of Hoist Transmission Gears, all running in an oil bath.

Trucks Earn More

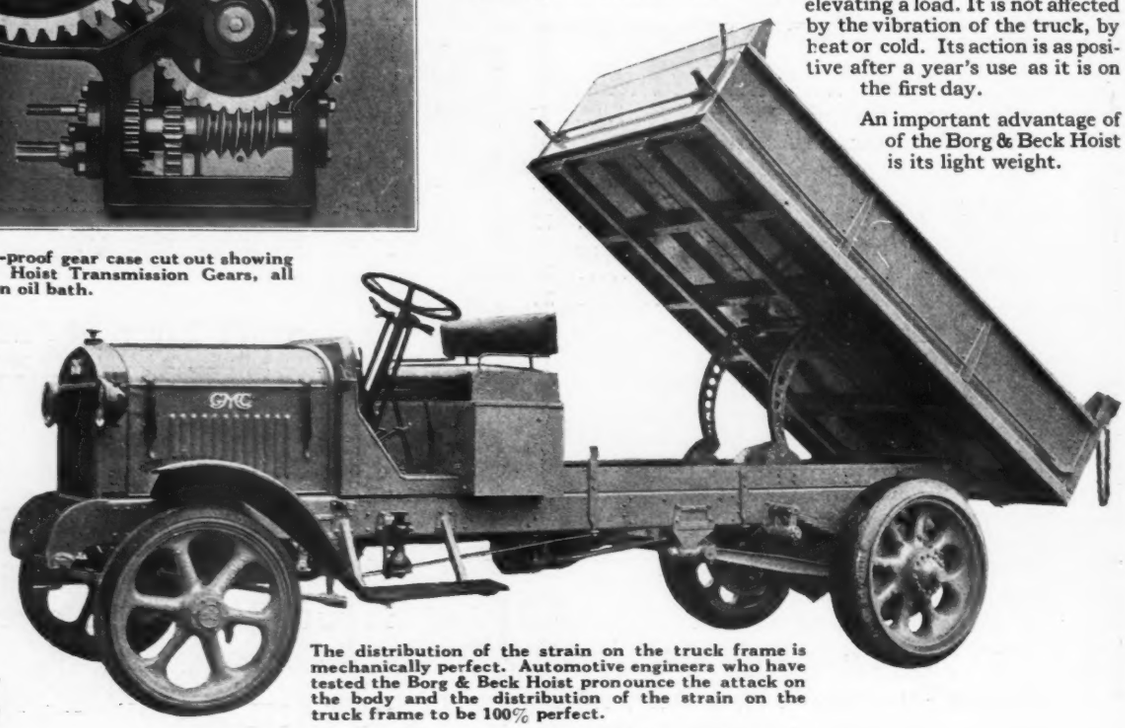
Trucks equipped with the Borg & Beck Hoist earn more for their owners. There are no delays caused by hoist trouble.

The Borg & Beck Hoist is easily attached to any motor truck frame at small expense. It costs no more than less efficient hoists, and its cost is limited to the initial investment, as there is no upkeep expense.

Nothing to Get Out of Order

Because it is purely mechanical in its action, there is nothing to wear out—nothing to get out of order—no valves to leak—no packings to become loose. It works only when it is actually elevating a load. It is not affected by the vibration of the truck, by heat or cold. Its action is as positive after a year's use as it is on the first day.

An important advantage of of the Borg & Beck Hoist is its light weight.



A hoist distributor's franchise for your territory may be open. Write for information.

Built in Two Sizes
Medium Duty
Heavy Duty

The distribution of the strain on the truck frame is mechanically perfect. Automotive engineers who have tested the Borg & Beck Hoist pronounce the attack on the body and the distribution of the strain on the truck frame to be 100% perfect.

Manufactured By

The Borg & Beck Company

Builders of the Famous Borg & Beck Plate Clutch. More than 2,000,000 in Use

Sales and Engineering Dept.
920 Michigan Ave., Chicago

Factories
Moline and Chicago

Sales and Service Stations: Shadbolt Mfg. Co., Brooklyn; Superior Body Co., Buffalo; The Schnable Co., Pittsburgh; E. D. Romans, Davenport; Jenkins Motor Co., Nashville; Chicago Sales and Service, 2807 Michigan Ave., Chicago; Auto Truck Steel Body Co., 3028 Carrol Ave., Chicago

INTERNATIONAL SPEED TRUCK *finds* BUYERS *in* ALL INDUSTRIES

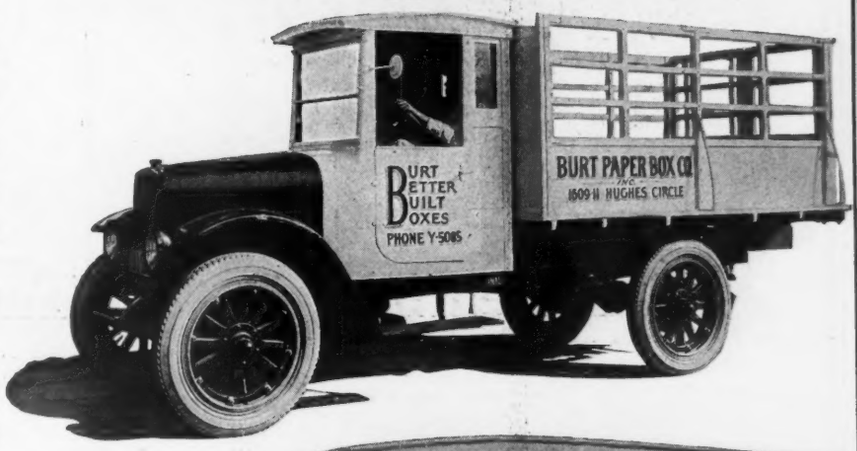
IT is distinctly to your advantage to sell a *complete* motor truck line that includes a full range of heavy-duty trucks, and a nationally popular Speed Truck for light, fast hauls.

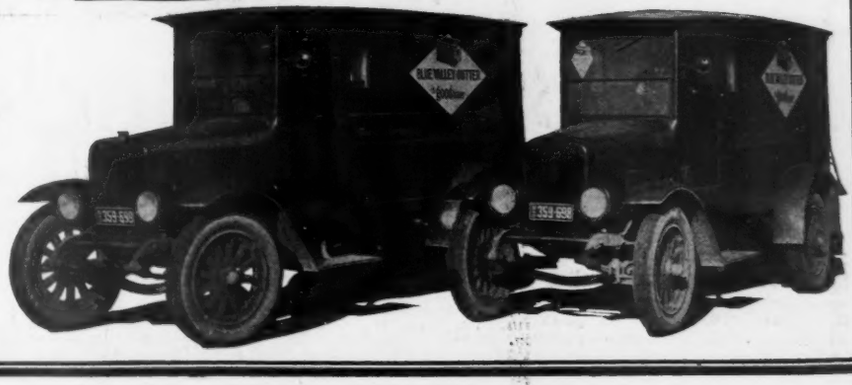
There are thousands of International Speed Trucks giving low-cost, dependable hauling service in all sections of the United States. These trucks are paving the way constantly for additional sales, both of Speed Trucks and International heavy-duty trucks. (Capacities range from 2,000 to 10,000 lbs.)

All International Motor Trucks are insured in service by the International Free Inspection Service Policy, which provides free inspection of all trucks at regular intervals. Not for merely one or two years, but for the life of every truck. Consider the sales advantage this service co-operation gives you.

We suggest that you ask us for complete details covering this line of "low-cost hauling" trucks. Great things are ahead for the man who realizes the profit possibilities of the International line. A telegram or letter to the following address will bring full information at once.

INTERNATIONAL HARVESTER COMPANY
606 S. Michigan Ave. of America (Incorporated) Chicago, Ill.





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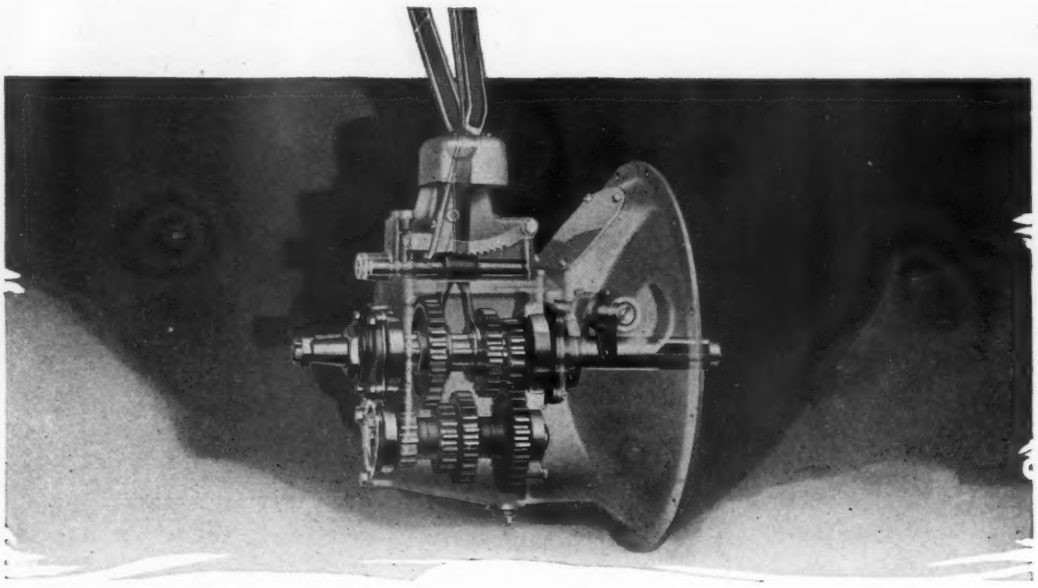
SKF



Ball Bearings Enable Transmissions
To Function Properly During Life of Car

THE proper functioning of the transmission is primarily dependent upon the accurate setting of the shafts and the maintenance of these settings in service. If bearing adjustments are necessary they are effective in restoring the shafts to position but do not restore the worn gears to proper mesh.

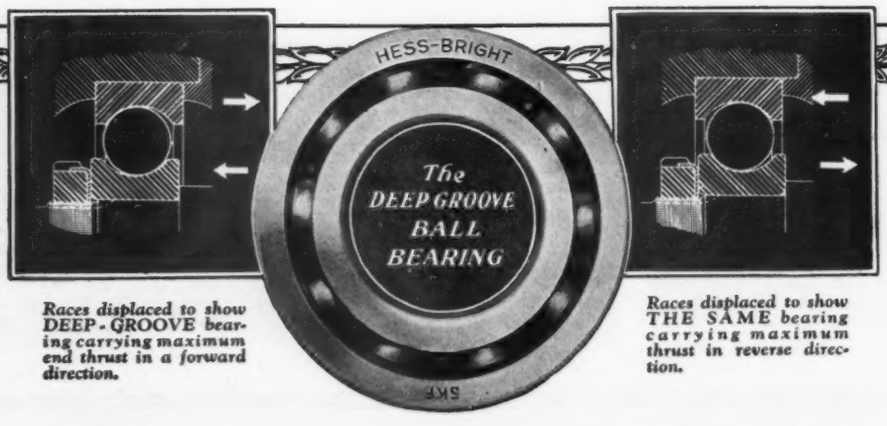
Both of the requirements for a smooth running, silent and efficient transmission are met when Hess-Bright deep-groove ball bearings are used. Mounted in carefully machined housings bored in a straight line, the accurately made ball bearings automatically position the gears in assembly and insure proper meshing of the gear teeth; and since this type of bearing is non-wearing, the shafts retain their settings and the gears remain in mesh during the life of the average car or truck.

Proper bearing selection is insured through the close co-operation of our engineers who will gladly work with you on shaft-support problems of all kinds.

THE HESS-BRIGHT MANUFACTURING COMPANY

Supervised by SKF INDUSTRIES, INC., 165 Broadway, New York City

1004



Races displaced to show DEEP-GROOVE bearing carrying maximum end thrust in a forward direction.

Races displaced to show THE SAME bearing carrying maximum thrust in reverse direction.

BALL BEARINGS
The Highest Expression of the Bearing Principle

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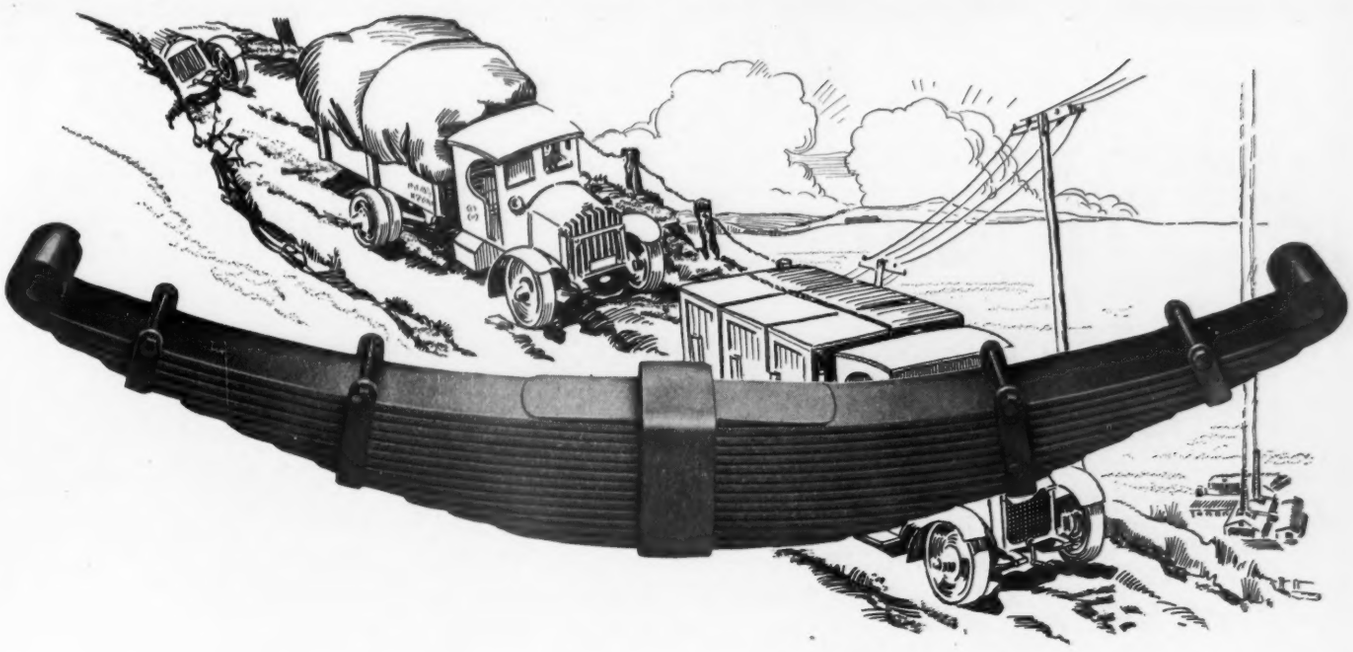

Performance-Proved Selling Assets!

Equip your chassis with Spring-Perch Springs. The acid test of performance will prove them to be real selling assets for you—and your dealers.

Since 1843 the Spring Perch Company has specialized in the manufacture of springs—made to a quality standard.

Why not avail yourself of the services of our spring experts. Send us your specifications.

Compound Springs for Bus Service—suitable for their greatly varying load conditions.

Banded Springs for Trucks—especially desirable for Hotchkiss Drive. Special designs for Speed Wagons.

SPRING PERCH COMPANY

Makers of Springs Since 1843

STRATFORD, CONN.

SPRING-PERCH

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The Increasing Volume of Shipping

This tabulation of railway car loadings by weeks is the handwriting on the wall:

	1923	1922	1921	1920
July 7....	854,748	707,025	639,698	796,191
July 14....	1,019,927	850,666	776,252	942,851
July 21....	1,028,927	835,548	790,348	928,418
July 28....	1,041,044	848,858	796,570	936,366

Now is the time when every shipper should investigate the ability and economy of his present motor trucks. If they are not able to take care of more than normal demands, he should take steps immediately to obtain additional units. The increasing volume of shipping will steadily put its strain on truck hauling as well as on the railroads, and it may become impossible to obtain easily that kind of satisfactory and economical motor truck equipment which is now available.

The Autocar Company
ESTABLISHED 1897
Ardmore, Pa.

Branches in 46 Cities

The sturdy
Autocar
Wherever there's a road

A complete line of Autocar trucks—new, rebuilt and reconditioned. Chasis prices, $1100 to $4350. Capacities, 1 to 6 tons.

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The Commercial Car Journal

VOLUME XXVI PHILADELPHIA, SEPTEMBER 15, 1923 NUMBER 1

Motor Bus Industry Ready for Big Expansion

Better Selling Methods and Education Among Dealers Needed to Sell the Individual Operator the Right Type of Bus. Public's Acceptance Must be Encouraged by High-Class Comfortable Vehicles

WHEN we review the progress made in the Motor Bus industry during the past two years, we cannot help but recollect the assertions made by some of the obstructionists in the early period of the industry, to the effect that the motor bus is simply a fad, or a tie-over, so to speak, until the traction companies were again in shape to expand. Some of the arguments sounded pretty good at that.

"Jitney" is Not Bus Service

In fact, a few years ago one would be inclined to agree somewhat with the prognosticators who visualized only failure for the motor bus, especially when one considered the make-shifts employed under the guise of motor buses, which were built mainly with the idea in mind of obtaining factory production. These vehicles displaced the piratical foe of the trolley companies, the "jitney." In many cases, they carried on the work of the jitneys on a larger scale much to the discomfiture of many existing trolley lines.

The jitney has given way to the bus, and the bus of a few years ago, that was simply a revamped truck, is today giving way to the modern specially designed vehicle, in which comfort, safety and speed are the prime requisites.

But the much abused jitney was not without its glory. It has been responsible for the Motor Bus as we know it today. All business projects, all essentials to human progress, must go through the stage of development. Refinement and improvements come in time. No great business such as the motor bus industry is eventually destined to be, can reach the stage of perfection over night. It takes time. The jitney led the way. It appealed to the masses, especially in such cities where increases in trolley fares, made it easy to induce the public to patronize a cheaper form of transportation. But the uncertainty of the service rendered by the jitneys, the operation of lines in direct competition with the traction service and the inability of the owners to make expenses, militated against this form of service, so that eventually the more modern vehicle took its place.

Today we find the motor bus in every conceiveable service. The motor bus has found a place not only as a servant of the great masses, but has become the transportable home of many private individuals. And regardless of the many obstacles, which have retarded its progress, such as restrictive legislation and excessive taxation the bus industry is forging ahead rapidly. The motor bus has been accepted by the "public" as a necessity. After all is said and done the public's desires must be met eventually in any town or city of this country. If the public prefers to ride in buses, instead of trolleys the traction company will gain public good will quicker by operating its own buses where needed, instead of combatting the bus idea. Many traction companies are already running their own bus lines, and the list is constantly growing.

Early Make-Shift Types Disappearing

In so far as design is concerned, it must be admitted that the motor bus had not passed the development stage as yet. However there has been a great deal of improvement noted especially in regards to the product of a few manufacturers, who have done exceptional work in pioneering bus development.

The high bodied motor bus mounted on a truck chassis is fast disappearing. The cheap body is giving way to a well upholstered body. The experienced bus operator has learned that poor construction is very expensive in bus service which incidentally is more severe than any other form of highway transportation service.

Some of the modern bus bodies cost more than the chassis upon which they are mounted. Bus bodies are now available to suit every requirement, whether for city service, inter-urban work, sightseeing, terminal work, etc.

The truck manufacturer who desires to build motor buses will find the market now offering specially designed engines, axles, frames, lighting equipment, etc. all designed for bus service, so that there is no excuse for using any units which are not suited for the purpose.

All sizes of units are available suitable for fourteen passengers buses up to the 40 passenger size, so that the manufacturer will have no difficulty in choosing units which will adequately meet his requirements.

Good Opportunity for Dealers

The choosing of a bus to handle in any particular territory is a problem which every dealer must decide for himself. A territorial survey is essential, more so today than it was some time ago. It is true that many motor bus routes have been established without much preparation but that was due principally to the fact that the demand was there. It was just a question of good luck. The territory was wide open. From now on more and more consideration must be given to the proper planning of the route by the prospective bus owner, and the dealer who is thoroughly conversant with the traffic situation in his town will naturally get the business much easier than the dealer who simply offers the bus, without any suggestions as to routes, cost figures, etc.

At the present time there are a number of distinct types of buses in service:

The large double-decked bus such as operated in New York City, Chicago and Detroit.

The sight seeing bus, which has long been a familiar sight in most large cities, carrying from twenty to forty passengers.

The motor coach, an inter-city bus, which is practically an enlarged limousine and carries from sixteen to twenty passengers.

The trolley bus and gasoline rail car.

The single decked, one-man operated bus, which seats from 14 to 29 passengers, and which is most generally used today. This type is used in cities in connection with trolley lines or as feeders to the lines in outlying districts. It is the type of bus that traction officials are interested in as a practical and least expensive way of extending their service to outlying districts. Expansion in the trolley field has been at a standstill for years, but the motor bus has bridged the gap and will enable traction lines to extend these facilities without incurring the tremendous expense necessitated in laying tracks, supplying extra power, etc.

The motor bus has passed the probation stage. It is here to stay and to be further developed.

It is another unit which the "transportation merchant" can add to his line and sell at a profit. It requires a different method of merchandising as compared to the method of selling trucks. The dealer must acquire an intimate knowledge of traffic conditions. He should be able to help the prospective bus operator by suggesting routes that would be of most benefit to the community, without arousing animosity of existing forms of transportation. He should not sell motor buses to an individual who expects to run along a popular route, which is perhaps already over-crowded. He should help the owner develop new routes which in turn will help the development of real estate along such routes. In fact it would pay the dealer to work closely with all the surburban real estate promotors. Many suburban developments are checked because suitable transit facilities are lacking.

The Motor Bus offers wonderful field for development to the wide awake dealer. The manufacturers stand ready to cooperate. It is a field which must be developed to its fullest extent through dealers. Of course there are some projects which will be handled through direct representation, but these represent such a small proportion of the total sales of motor buses, that they do not have much influence on the total market. The majority of the buses now on the streets have been sold through dealers. He is the individual upon whom the factory depends upon to render service to the owner, and he is in close touch with local conditions.

Once again we want to reiterate, that, regardless of the bus lines that have failed; regardless of the crudities of the earlier designs, and despite the antagonism which the bus interests have to face even today, the number of buses is constantly increasing. The public is sold on the motor bus and that is sufficient assurance that the business is bound to increase.

Motor Buses and Equipment Will be Much in Evidence at A.E.R.A. Exhibition

Convention Will be Biggest Ever Held by the Electric Railway Interests. Over One Hundred and Fifty Exhibits of Electric Railway Appliances, Motor Buses, Bodies, Parts, etc., Totaling 58,000 Square Feet of Floor Space

ACCORDING to information received from the American Electric Railway Association, 8 West 40th St., New York City, the forthcoming 42nd Annual Convention to be held at Atlantic City, October 8th to 12, on the Million Dollar Pier, under the auspices of the above association, will undoubtedly outstrip all for events in attendance and in the number of exhibitors.

At the time of this writing over 150 exhibitors have been assigned space. This will be the second year that motor buses and railway apparatus will be shown side by side. This year the motor bus exhibits will be even more comprehensive in their scope than those last year at Chicago.

A significant feature of the convention is noted in the fact that the second day, Tuesday, October 9th, will be given over largely to the discussion of the motor bus. The subject assigned for the day, is entitled, "Co-ordination of the Electric Railway and Bus Transportation." Other important subjects such as, uniform motor vehicle regulatory laws and construction and maintenance of highways for motor vehicles will be discussed by prominent and well informed men.

A list of exhibitors with space numbers, as of September 7th, supplied by Fred. C. J. Dell, Director of Exhibits, follows:

Acme Motor Truck Co.		Morton Mfg. Co.	602
Air Reduction Sales Company		Metal Thermit Co.	13, 116, 118, 120
American Motor Truck Co.	300, 302	More-Jones Brass & Metal Co.	544, 555
American Abrasive Metals Co.	538	National Railway Appliance Co.	620
American Brake Shoe & Foundry Co.	500	National Tube Co.	550, 552
American Car & Foundry Co.	410	R. D. Nuttall Co.	17
Anaconda Copper Mining Co.	525	The National Lock Washer Co.	541
American Steel & Wire Co.	551	National Pneumatic Co.	12, 18 inc.
E. B. Badger & Sons Co.		Nachod Signal Co.	512, 514
Bates Expanded Steel Truss Co.	212, 214	New York Transportation Co.	
Bethlehem Steel Co.	562, 567 inc.	National Brake Co.	543
The Buda Co.	172	Naugle Pole & Tie Co.	560
The J. G. Brill Co.	8B	National Carbon Co.	604
Bridgeport Brass Co.	149	The Okonite Co.	534, 536
Cheatham Electric Switching-		The Ohio Brass Co.	23
Consolidated Car Fender Co.	506	Ohmer Fare Register Co.	558
Barron G. Collier, Inc.	606	The Pantasote Co.	400
Chicago Pneumatic Tool Co.	101, 107 inc.	N. A. Petry Co.	
Cleveland Fare Box Company		Pratt & Lambert, Inc.	501
The Curtain Supply Co.	610	The Rail Joint Company	403
Consolidated Car Heating Co.	22	Root Spring Scraper Co.	575
Chillingsworth Mfg. Co.	503	Reade Manufacturing Co.	505, 507
Carnegie Steel Co.	416	Reo Motor Car Co.	124, 136 inc.
Day & Zimmerman	412	Railway Utility Co.	502, 504
Device Co.	516	Railway Improvement Co.	508, 510
Differential Steel Car Co.		The Railway Materials Co.	531, 533
The Drew Elec. & Mfg. Co.	576, 577	St. Louis Car Co.	540
Duff Mfg Co.	571	Safety Car Devices Co.	19
Electric Service Sup. Co.	414	Simmons-Boardman Pub. Co.	10A
Economy Electric Devices Co.	616	Star Brass Works	574
The Ellcon Co.	602A	A. Stucki Company	528
Elliott Service Co.	559, 561	Sattley Co.	582
The Electric Railway Im. Co.	200C	George W. Saums Co.	511
The O. M. Edwards Co.	527, 529	The Peter Smith Heater Co.	583
Electric Traction	10	Standard Underground Cable Co.	405
Fageol Motors Co.	304, 306	Stafford Rolling Bearing Car	
Federal Motor Truck Co.		Truck Corp.	104, 106
Foamite-Childs Corp.	521, 523	Standard Johnson Co.	622
General Electric Co.	20, 10B, 10C	The T. H. Symington Co.	570
Galena Signal Oil Co.	24	S. K. F. Industries, Inc.	311
Gould Coupler Company		The Sherwin-Williams Co.	578, 580
Griffin Wheel Co.	612	Taylor Electric Truck Co.	111, 115 inc.
Garford Motor Truck Co.	310, 314 inc.	The Timken Detroit Axle Co.	584, 587 inc.
Gold Car Heating & Lighting		The Texas Company	8A
Co.	579, 581	Transit Equipment Company	532
Globe Ticket Co.	572, 573	The Trolley Supply Co.	556, 557
Graham Brothers		Tuco Products Co.	526
Hale & Kilburn Corp.	406, 408	Tool Steel Gear & Piston Co.	618
Haskelite Mfg. Co.	608	The United States Graphite Co.	530
Heywood-Wakefield Co.	520, 524	The Universal Lubricating Co.	509
Hoover Body Company	303, 305	United Lead Co.	518
Hyatt Roller Bearing Co.	614	Wheel Truing Brake Shoe Co.	513
Illinois Steel Company	416	Western Electric Co.	515, 519 inc
International Motor Co.	301	Westinghouse Trac. Brake Co.	144
International Register Co.	537, 539	Westinghouse Companies	21, 15A
International Steel Tie Co.	121, 125 inc.	Westinghouse Elec. & Mfg. Co.	15B, 216
Ingersoll-Rand Company	200B	William Wharton, Jr. & Co.	588, 589
The Lorain Steel Co.	546, 549 inc.	The White Co.	133, 147 inc.
McCardell & Co. J. R.	200D	Witherow Steel Co.	109
Morganite Brush Co.	535	Waukesha Motor Co.	117, 119
		Yellow Coach Mfg. Co.	313, 310 inc.

Where Intelligent Municipal Supervision Has Built Real Motor Bus Service

By A. V. COMINGS

MOTOR TRUCK DEALERS, READ THIS

How does your city government treat the motor bus lines running on your streets? Are the bus lines regulated intelligently, are they given every help by the city government to make them better bus lines, to make it possible for them to serve your growing community as a modern transportation system should? Read this article, telling how the city government of Paterson, N. J., has made it possible for its bus lines to handle over twenty-three million people annually, to make real money for the bus owners. Then show this article to your alderman, and insist that YOUR city install real system for developing and expanding the motor bus lines within its borders. Here is a chance for live motor dealers to do constructive work that will result in the sale of many motor trucks.

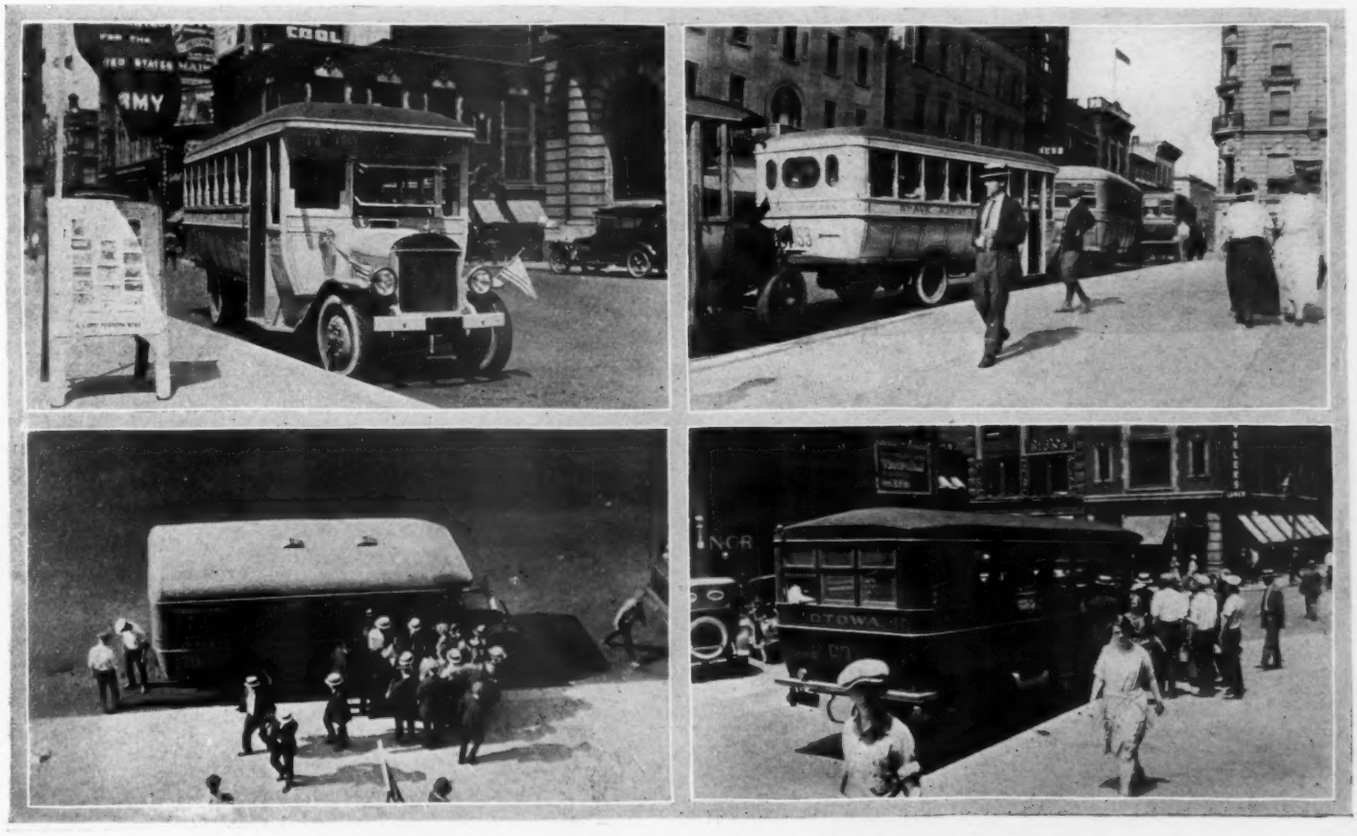
AS an admirable contrast to those cities that restrict and hamper motor bus service without regard to the tremendous convenience and necessity it might become to their citizens, Paterson, New Jersey, stands out as a veritable beacon light.

Exceptionally intelligent municipal supervision of all bus lines by a specially created traffic commissioner's department has resulted in the orderly development of a motor bus service that handled well over twenty million passengers in 1922, that paid over forty-three thousand dollars into the city treasury, and that maintains modern types of motor vehicles on regular schedules over regular routes, giving to Paterson people a transportation system modern and efficient beyond anything they have ever had before.

A few years ago Paterson had the usual wildcat, "jitney" bus service that many cities even today mistake for motor bus operation. The evils of that kind of service are too well known to admit of recounting here. People rode in the nondescript vehicles of that day, as they will always ride in anything that has wheels and power. But Paterson people did not admire nor commend the bus service of those days.

Then Mayor Van Noort took a hand. Mayor Van Noort is a man of vision. He saw the possibilities in the motor bus, properly operated under municipal supervision. But his idea was a constructive supervision that would bring to Paterson a real motor transportation system, not a supervision that would throw about motor bus operation hampering and expensive restrictions that would make it impossible for operators to give good service and yet make a fair return on their investment.

Ordinances were prepared to regulate motor bus operation, and the city council passed the ordinance. Routes were mapped out with real regard to traffic demands. And the entire municipal man-



Various Views of Buses Standing and Loading at Main Concourse, City Hall

agement of the motor bus transportation system was turned over to the newly created traffic commissioner's department, made a part of the board of public works.

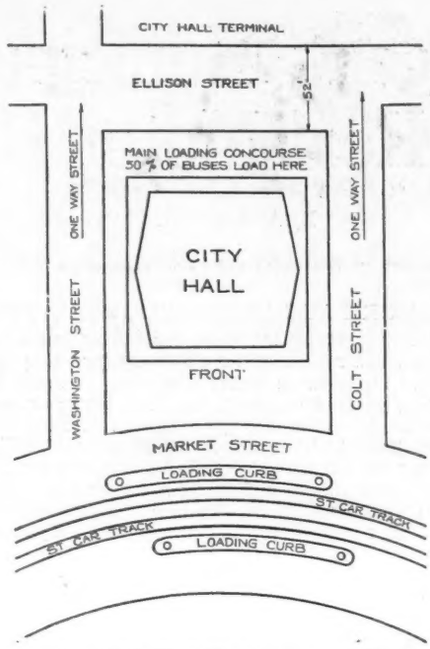
He selected J. P. Bradley for the important post of traffic commissioner, to head this department, and his selection of Mr. Bradley was fortunate in the extreme; fortunate for both the ctiy and for the bus operators.

Knows Transportation

For Mr. Bradley brought to this office a wide vision of Paterson's transportation needs, a keen appreciation of traffic problems, and a sympathic understanding of the bus operators' viewpoint. Mr. Bradley is a man of real executive ability, he goes ahead and does things, and his tenure of office has been marked by a constructive progress in motor bus operation that puts Paterson in the front rank among cities having modern transportaton systems.

Mr. Bradley has been fortunate in the selection of his chief inspector, A. J. Kane, who brings to his daily contact with the men who operate the motor bus system a courteous and forceful supervision that gets prompt results, yet maintains the very best of feeling on the part of the men on the job for the traffic department.

Today there are 27 bus routes covering the city in a net work of convenient lines centering at the city hall bus terminal. Many of these routes extend beyond the city limits into growing sections, making civic expansion possible and relieving building congestion in the more crowded areas. Approximately 150 motor buses of the most modern type cover these routes regularly, buses that are safe, clean,



Showing City Hall Concourse and Market Street Loading Curb

and operated by courteous and efficient drivers.

That intelligent municipal supervision of bus lines is very profitable to all concerned is shown by the startling figures of passenger haulage in Paterson.

In the first eleven months of 1922 covered by the department's annual report, the buses hauled the tremendous total of 19,361,092 passengers! That is SOME record in a city of less than 200,000 people.

And this is a jump from 5,664,187, the total carried in 1919, before the present municipal supervision went into effect, when buses were called "jitneys" and "ran wild."

Big City Revenue

Under the present laws the city of Paterson receives 5 per cent of the gross revenue of the buses on their city fares. And this amounted to $39,248.16 for the eleven months covered by the 1922 report. Carried out for another month, on the same average, the city of Paterson received $43,248.16 for its share of the proceeds last year, which is a considerable increase over $13,044.46 paid over to the city by the bus operators in 1919.

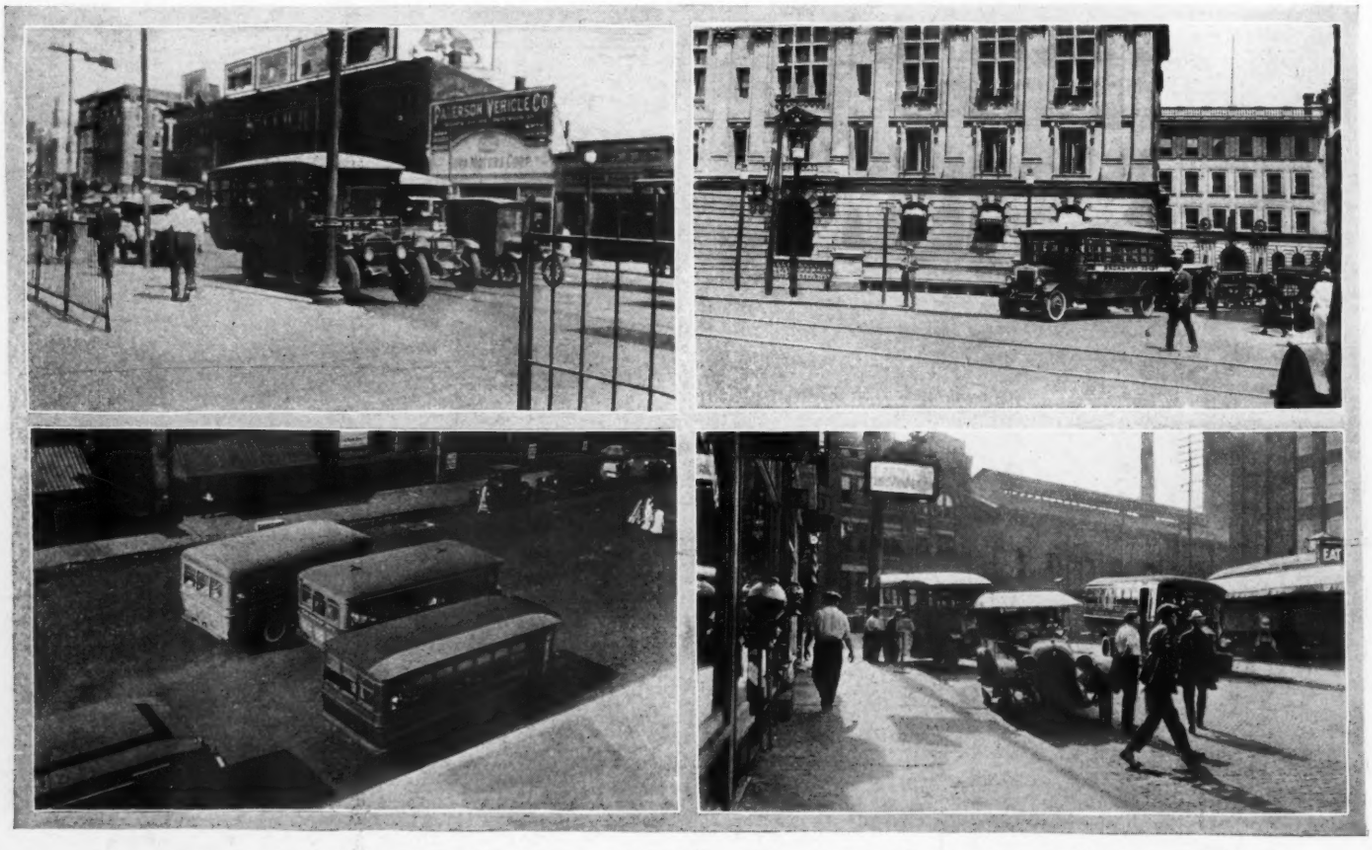
As the total expense of maintaining the traffic department that supervise bus operation was only $10,350 in 1922, it will be seen that the buses are a very nice source of revenue to the city.

In addition to this revenue, the commissioner issues special permits to buses to go off their routes for special service, for which a charge of $30 is made, which goes into the city treasury. And each time a bus is transferred from one owner to another, a fee of $50 is charged, more for the purpose of securing a record than for the actual money received.

Here are some individual records that show what can be done by intelligently supervised buses.

Five buses on the Park avenue line carried 157,639 passengers in May of this year, with a total gross income of $7,881.95. The city's share of this was $394.09.

Fourteen buses on the Main street line carried 377,763 passengers in May, 1922.

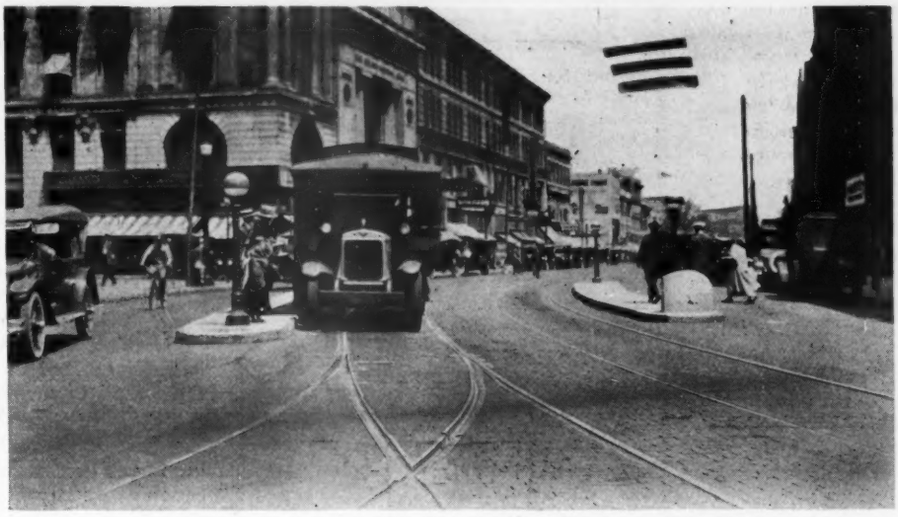


The Buses Discharge at the Railway Depot From Outlying Districts. They Also Travel to Montclair and Newark

And Park ave. line bus No. 14 carried 36,099 passengers in the month of December, 1922, with gross revenue of $1,804.95, paying the city $90.25 for the one month's operation.

That is a record that is, as far as I know, without parallel in bus operation.

Ninety per cent of the buses in operation in Paterson are equipped with fare registers, so that the figures given in all these citations are extremely accurate. A careful check is taken on the buses not equipped with registers so that a very accurate estimate may be made of their totals.



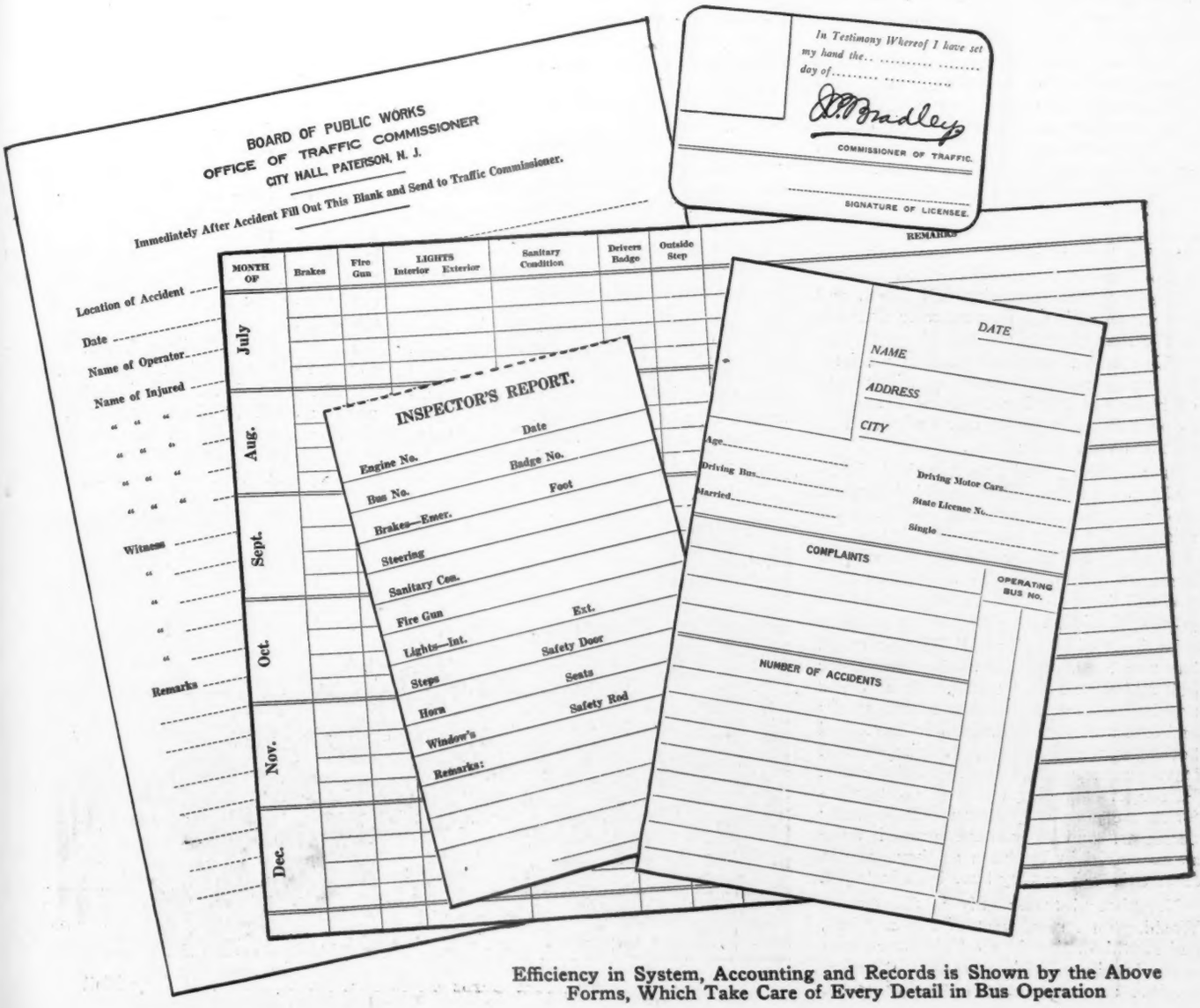
Loading at Main Concourse, Ellison Street Frontage of City Hall

The record of May of this year is interesting, for the 128 buses operating during that month carried 2,207,123 passengers, and the city's share of the city fares collected was $4,350.42 for the month.

The average annual net income of individual bus owners operating in Paterson is from $8000 to $10,000 according to officials of traffic commissioner's office.

To date the commissioner's office has been able to get 90 per cent of the bus owners to pool receipts of buses operating on the same routes. There is no law compelling this, but the commissioner has been able to show the owners the wisdom of the plan, and is working with the other owners, who will eventually enter into this agreement.

Under this system all the fares taken in on all the buses covering the same route are put into the same fund, and the total, after the city's 5 per cent has been de-



Efficiency in System, Accounting and Records is Shown by the Above Forms, Which Take Care of Every Detail in Bus Operation

ducted, is divided equally among the bus owners according to the number of buses each operates.

This does away absolutely with the crowding in of one bus ahead of another to take the cream of a crowd, which often leads to fights among bus operators, accidents, etc., where the system is not in use.

City Hall Bus Terminal

In no detail of its supervision of Paterson's bus lines has the traffic commissioner shown more wisdom than in the development of the bus terminal facilities at the city hall. This is the principal down town loading and unloading point, and so admirably have bus routes been arranged and platform space provided that even in the rush hours there is little confusion. Through the busiest hours, buses arrive and depart with almost clock-like regularity. Passengers are unloaded, and new loads are taken on, in the briefest possible time.

Paterson's city hall is an exceptionally beautiful building, fronting on Market street, the principal business thoroughfare of the city. Fortunately Market street is a great, wide traffic way. At the rear of the city hall is Ellison street, a two-way thoroughfare, and east and west of the municipal building run Colt and Washington streets, both one way streets.

Fifty per cent of the Paterson buses load and unload at the Ellison street concourse in the rear of the city hall. Formerly the Ellison street frontage of the city hall consisted of a narrow walk and an ornamental, green grass plot. But Commissioner Bradley saw a much more necessary use for the space occupied by the green grass, and recently this space was leveled and paved with asphalt, giving Ellison street a width of 52 feet the entire length of the city hall block, and leaving an eighteen foot concrete sidewalk at the rear of the building.

All along this entire loading platform buses may now load two deep, with plenty of room for moving buses and vehicles to pass through the regular Ellison street east and west traffic lanes.

It provides admirable terminal facilities for the buses arriving and departing, with plenty of room so that accidents are minimized.

Loading curbs, for the outside row of buses, are planned for the near future, and this will add another safety element to the present facilities.

In front of the city hall, Market street has two long, elevated loading curbs for east and west bound traffic. These curbs are built between the street car tracks and east and west bound traffic lanes, and both buses and street cars take on and leave passengers the length of the curbs. Passengers standing on these safety platforms are practically immune from traffic accidents, and they have proved quite as successful in Paterson as they have in other cities where they have been installed.

Northbound traffic only is allowed on Washington street, west of the city hall, and southbound only on Colt street, east of the building. This arrangement makes possible an uninterrupted flow of traffic around the city building which is admirably handled.

Inspection of Body and Chassis

Permit No..... Date.....
Make of Chassis .....
Motor No. .....
Capacity .....
Register .....
Fire Gun .....
Safety Door .....
Lights ..... Int. .....
Ex. .....
Straps on hand rail .....
Fifty per cent transverse seats inside of body. .....
Safety rod from driver's seat to door .....
Horn .....
Wheelbase .....
Length of body .....
Height of frame .....
Stop light on rear .....
Step light .....
Gas tank outlet .....
Outside step .....
Heating system .....
Route Signs ..... Color .....
Tires .....
Center of body forward center of rear axle .....
Glass in bottom of front door .....
Overhang of body over end of frame .....
Height of ceiling from floor .....
Panel forward right hand door .....
Window guards .....
Insurance .....
Ins. by .....

That the traffic commissioner's office is constantly striving to improve conditions in Paterson is shown by the fact that as this article is being written, there is an ordinance before the city council for a rerouting of vehicles to improve the somewhat congested condition on Main street, between Broadway and Market.

City Hall Passenger Check

On June 20 of this year the traffic commissioner's office made an actual count of passenger traffic via the bus lines touching at the city hall terminal.

From 6 a. m. to 12:30 midnight there were 9,226 passengers arriving and departing from the city hall terminal on 52 buses operating over 11 routes. These buses touched at the city hall terminal 1,032 times during that period.

Drivers Selected Carefully

No man may drive a Paterson bus who has not sucessfully passed the department's drivers' test. This applies to the regular or occasional relief driver quite as definitely as to the regular full-time operator and in case of infraction both the bus owner and the driver who has no card are penalized severely. For the department is determined that insofar as it is responsible there shall be no accidents because of lack of care in selecting the right kind of men for drivers.

Drivers of Paterson must be competent. The man who wants to drive a Paterson bus must first make out a regular application form, printed herewith. This covers his personal record as a driver, and below the portion he fills out there is space for the department to fill in the results of the rigid test the driver is put through before his license is issued. This test includes both the state motor vehicle law test and the city bus ordinance test, both of which are thorough. The man who passes these is competent to drive, insofar as his ability to handle a bus is concerned. The applicant is also given an actual driving test, during which he must prove to the satisfaction of the inspector that he really knows how to handle the vehicle in all kinds of traffic.

The driver who successfully passes these tests is issued a bus driver's identification card, shown herewith. This card is 2⅝ in. x 4 in., printed in red and black. The card carries a small photograph of the driver in one corner, is numbered, and is also signed by the driver. He must carry it at all times when driving, and produce it on demand of any one in authority.

The office record of the driver, which is on file at all times in the department, is a white card 5 in. x 8 in. This also carries a duplicate of the photograph on the identification card, and has spaces for a complete record of the driver, especially as to complaints that may be made against

Buses Loading From Curbs on Market Street, Front of City Hall

him and of accidents in which he is implicated.

The checkup on the drivers is very thorough at all times, and as the men recognize this fact, they are very particular to obey all the rules, and keep out of trouble, for infractions are dealt with summarily.

Commissioner Bradley is determined to minimize accidents and other trouble that may be due to careless drivers and to this end rules the men with an iron hand.

Very Few Accidents

That the commissioner's methods have been effective is shown by the actual accident figures, for in the 2½ years this system has been in effect there have been but three serious accidents.

Even minor accidents are infrequent, and when one takes into account that the buses are hauling on an average of 62,000 people a day, and that the average individual is careless, awkward and heedless in crowds, this record appears all the more remarkable.

There are few instances of municipal supervision of public service that show anywhere near as fine a record as this.

Men Work in Shifts

The buses run long hours, too long for one driver to work the whole shift. From 6 a. m. till 1:30 the next morning the buses roll their routes, and the men work in shifts so there will be no accidents due to the exhaustion of the men at the wheel.

No Verbal Orders

Right here it is pertinent that NO VERBAL ORDERS are issued from the office of Traffic Commissioner Bradley. There is an iron-clad rule requiring all orders, no matter how trivial, to be WRITTEN ORDERS. These are written with a carbon copy, so that no one receiving an order can come back with a "you didn't say that," or "you said this." The order is there in black and white, there is no argument, and the plan has saved many a controversy. It is a plan that may well be used wherever buses are operated.

Accident Reports

A very comprehensive accident report blank has been devised by the traffic commissioner's department which must be filled out and turned in by the bus driver immediately after the accident.

On one side of this report, which is 8½ in. x 11 in. in size are spaces for entering the location in which it occurred, the names of injured and witnesses, etc., and on the opposite side are shown every type of street intersection to be found in Paterson. If the accident is a collision, the driver must draw in the position of the vehicles at the time of the crash, in one of the intersections corresponding to the relation of the streets at the point at which the accident happened. He must also indicate the direction in which each vehicle was moving.

This method of recording collision accidents, immediately after the crash, gives the department an absolute record, and has proved very valuable in cleaning up the aftermath which always follows collisions, for with the "picture" of the accident just as it happened, drawn on the spot, there is no chance for shifting of blame from one driver to another through versions of the collision that the report shows to be inaccurate.

Application for Motor Bus Operator's Test

Name .....Address .....City .....
Age .....Citizen .....Place of Birth and Date .....
Year of First Motor Vehicle License.....Have you ever had bus operator's badge?.....

Space below to be filled in by Inspector only

State Motor Vehicle Laws, Test .....Eye Test .....
City Bus Ordinance Test ..... Driving Test .....
Date of Test .....Physical Appearance .....
Remarks: .....
.....
.....
.....
Test made by Inspector .....

The records of the department show that 70 per cent of all accidents occur at the bus doors, and to check this as much as possible there is a very rigid rule that bus doors **must** be closed whenever the vehicle is moving, even if the bus is going only a few feet at a very slow speed. Disregard for this rule will get a bus driver into trouble quicker than almost anything else. And in bus inspections, too, the door operating mechanism and the condition of the bus steps is always checked up very carefully by the inspectors, and the least defect is immediately remedied before the bus is allowed to operate.

New Bus Inspection

Every bus that operates on the streets of Paterson must pass a rigid inspection before it is allowed to go into service. All of the buses now in operation had to pass the test, and every new bus put into service must have the inspector's O. K. before a permit is issued for its operation.

A copy of this inspection card is shown herewith. The card is 4 in. x 10 in., and when the inspector has gone over the job and signed his name to this card it is a certainty that the bus is in good shape and ready for the hard work of hauling passengers over long routes.

Weekly Bus Inspection

Every bus in service in Paterson is inspected weekly, and for this work there is a force of four inspectors. They make out their report on a small inspection sheet, 4 in. x 6½ in., put up in pads, with alternating white and yellow sheets perforated at the top to tear off. The yellow carbon copy is kept by the department, the white sheet is given to the driver so that any repairs ordered may be made at once.

The reports of the buses inspected each day are entered on cards at headquarters, and the bus numbers are checked up, so that there is an absolute check that makes it impossible for the inspectors to overlook any bus in the fleet.

The card used for this record is 9 in. x 12 in., and carries spaces for the inspector's report complete. One card covers the inspections for 6 months, and each bus has its own card. On the reverse of this card are spaces for data covering the bus, its owner, capacity sitting and standing, insurance, etc.

Bus and Car Fares

A five cent fare is charged by the buses within the city limits, and several of the routes which extend beyond the city charge an extra five cents if their routes extend beyond the municipal limits for some distance.

City street car fares are eight cents, so that the buses have quite an edge on the street cars when it comes to the charge for riding.

Policemen, firemen, postmen and other city employes in uniform ride free.

Of the 27 bus routes, only six parallel street car lines either on the same or nearby streets, and these routes extend beyond the end of the street car lines, giving their passengers a longer ride for their nickel than the cars do for eight cents.

All the other routes are non-competing as far as the street cars are concerned.

Ownership of Buses

Most of the 128 buses operating in May in Paterson are individually owned, but there are several fleets. The Arrow Bus Co. operates 24 buses, of which 22 run between Newark and Paterson, a distance of fifteen miles. Two run between Paterson and Ridgewood, a six mile route. The city gets its percentage of all city fares on these routes.

A. A. Lydecker runs a fleet of seven buses, and the Main Street Bus Owners' Association with its fourteen buses, has its own garage and maintenance station, with its own mechanics on the job keeping the buses fit mechanically.

Sizes of Buses

Ninety per cent of the bus bodies used in Paterson measure 19 ft. 6 in. in length by 7 ft. 6 in. in width, and seat from 26 to 30 passengers. Almost all of these are fitted with the street car type cross seats.

Each bus carries its own city number, which must be painted on the bus body in figures one foot high that it may be easily read at all times.

Liability Insurance

All buses operating in Paterson must carry $5000 liability insurance, under the Kates act passed by the New Jersey legislature in 1916.

Dependable Bus Service Gains Public's Confidence

Connecticut Bus Line Maintained Schedules Despite Severe Snow Storms Last Winter. Buses Make Connections With Railroad and Steamship Lines

By C. S. PERRIE

THE Connecticut Motor Transportation Company which operates a fleet of 13 White buses between Hartford, Norwich and New London is said to be the most successful motor bus company in Connecticut. The success is due to supplying a dependable, safe and satisfactory service, and a profitable one. The experience of the public with these buses answers the question as to the dependability of the motor bus during the winter. After making a careful inquiry at all three terminals, the writer learned that the buses practically maintained schedule all last winter despite the large number of snow storms. During the worst storm, when the trolleys failed to get through, and the steam lines were hours late, the buses were the first to break out a road. And the maximum lateness was only 28 minutes.

Lines Do Not Parallel

The routes traversed do not parallel those of the trolley or steam lines for the Public Utilities Commission of Connecticut will not grant a permit or franchise to a common carrier if it parallels or competes. While the buses do serve between Hartford, New London and Norwich, places served also by the steam lines, the territory between is not served by the common carriers.

The buses running from Hartford to New London travel by the way of Glastonbury, Buck's Corner, Marlboro, Westchester, Colchester, Hillside, Salem, Chesterfield, thence to New London, 44.4 miles. At Colchester, 24 miles from Hartford, the company operates buses between Colchester and Norwich, and serves Camp Moween, Fitchville and Yantic. Connection is made with the buses between New London and Hartford and vice versa. This gives a service to the people of Norwich and towns between it and New London and Colchester, a service highly appreciated by the commercial traveller as explained more fully in another paragraph.

The striking feature of the service is the running time between New London and Hartford. On two trips, early morning and late at night on Saturday, particularly, the buses cover the 44.4 miles in two hours flat. This means that an average speed of 27.2 m. p. h. is maintained which, when the fact is taken into consideration that 11 stops are made, means that a much higher rate of speed is made than the figures indicate. From Hartford to New London the time for trips vary from 2 hrs. 5 min. to 2 hrs. 15 min., with eight stops. The difference is due to the grades.

Dual Pneumatics Are Used

The buses are equipped with dual pneumatic tires on the rear wheels. Very good mileage is said to be obtained despite the high speed. As must be obvious a different gear ratio is employed to obtain the speed required, and it is said that a slight modification was made from the standard transmission supplied by maker of the buses.

Although the buses cover a large number of miles weekly, and considering the travel at a high rate of speed and with capacity loads, and many times extra passengers, they are giving excellent service. A rigid inspection of all units, with particular reference to brakes, etc., is maintained and this is brought about by a daily report which each driver fills out. A periodical service station inspection is also made. A corps of mechanics supply 24 hour service. An emergency bus is always ready to take the place of any not functioning properly.

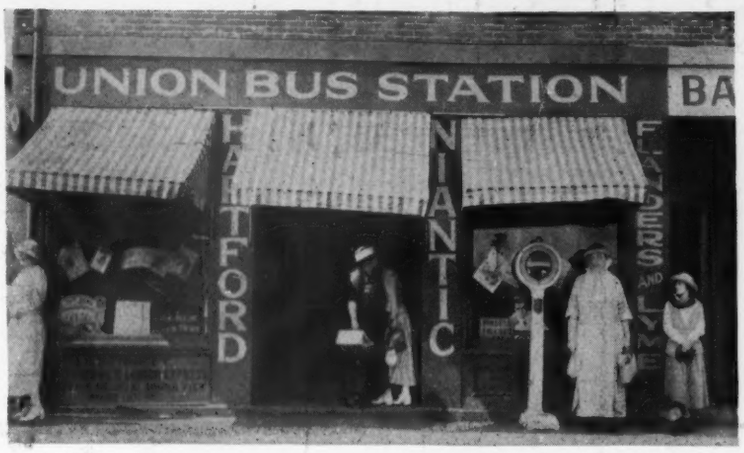
Real Service Cuts Cost

According to the superintendant, F. H. Geer, the original chassis, some of which have passed the 100,000 mile mark, have had no replacements of parts other than a gasket. Of course brakes have been relined valves ground, carbon removed, adjustments, etc., made. One bus in particular has cost but 10 cents for cotter pins, states Mr. Geer. As is obvious the units are kept properly lubricated and nuts, bolts, etc., are kept tight. Lack of proper lubrication and failure to tighten nuts and bolts is responsible for high maintenance costs in motor highway transportation. The service station is located in New London, as are the main offices, and plans have been completed for a new and model service station.

It is said that the service rendered between Hartford, New London and Norwich has won the favor of the public,

Left: Late Arrivals Taking the Bus for New England; Extra Buses Are Run on This Trip When Necessary. Luggage is Checked Free. Right: Luggage Compartment in the Rear of the Bus, Patrons Do Not Have to Bother With Grips as These Are Checked at the Terminals

particularly the travelling man who covers these cities and the intervening points. The buses are favored because the service is clean, fast and less expensive than the common carriers, factors always given consideration by the public. These advantages are best explained by considering the itinerary of a commercial man who is at either Hartford or New London, and desires to cover Norwich as well. By rail from New London he would ride to Norwich, thence by the way of Plainfield, Willimantic to Hartford. This would require four hours plus, and the trains are none too numerous. The buses beat this time by a wide margin. Based on the railroad charge per mile of 3½ cents, it would cost over $3 by train. The bus fare from New London to Hartford or vice versa, is $2.



New London Terminal From Which Several Connecting Lines Operate

Some interesting stories are told of the experiences of the buses during last winter. On the day that the common carriers were tied up the White buses broke open the road by using snow plows. It is said that on several occasions they were the first thru from Hartford to New London. On one of these trips a 5-ton truck with a load of poles became stuck and blocked the road so the driver of the bus hooked on and pulled the truck out.

While the peak loads are carried in the warm weather paying loads are transported in winter. It is explained that many commercial men who use automobiles in summer patronize the buses in cold weather. Also there is considerable regular traffic between Hartford and New London and Norwich.

Publishes Schedule Cards

The Connecticut Transportation Company issues a schedule card giving the time of arrival and departure, mileages and tariffs which are based on zones. There are six trips daily from Hartford to New London and two extra on Saturdays, Sundays and Holidays. There are eight daily trips to Colchester and Norwich and return. From New London to Hartford there are 11 daily trips.

The buses make a number of connections with steam lines, boats and buses. Among these is a connection at Marlboro for East Hampton, a five mile run. A connection is made at the New London bus terminal for the Groton & Stonington Traction buses for Mystic; at Norwich for the Westerly, R. I., bus, and at Colchester for Norwich. At the New London terminal connection is made for the Keeney's Point and Eastern Point buses, also for White Sands Beach, Sound View, Flanders, Lyme, Black Hall, Niantic, Submarine Base, etc.

Accurate Running Time Maintained

The bus leaving Hartford at 6.30 a. m., connects at New London on five days of the week for the Block Island boat which leaves 30 minutes after the scheduled arrival of the bus. Another boat connection has but a margin of 15 minutes, and one train connection of but two minutes. Train connections are made at New London for Boston, New York and Washington. Because of these connections, which are advertised, schedule must be maintained. This requires that each bus be maintained in the best of condition.

Both at the New London and Hartford terminal there is courteous service rendered. At Hartford there is an office and waiting room with bulletins announcing the time of departure of every bus, its destination, etc. At New London there are clocks which indicate the departure, and destination, of the various buses operating from the terminal. Patrons of the Connecticut buses are provided with free baggage service. If one desires he may check his luggage at the terminal in advance. This service is appreciated by those who wish to do a little shopping, etc., before the departure of the bus.

The drivers are attired in neat uniforms and are unusually courteous and skillful. Thus far no accidents have occurred which proves that the best driver is the cheapest in the long run. Fares are collected by the drivers before the departure, a double form of check or receipt is employed, these are a special form designed by Mr. Geer. They are used with a McDonald carrier. The seating capacity of each bus is 22, but extra passengers are carried on folding chairs. It is not uncommon to run four buses to Hartford and New London. The leading bus carries a green flag indicating a bus following. Luggage is stored in special compartments at the rear of the body.

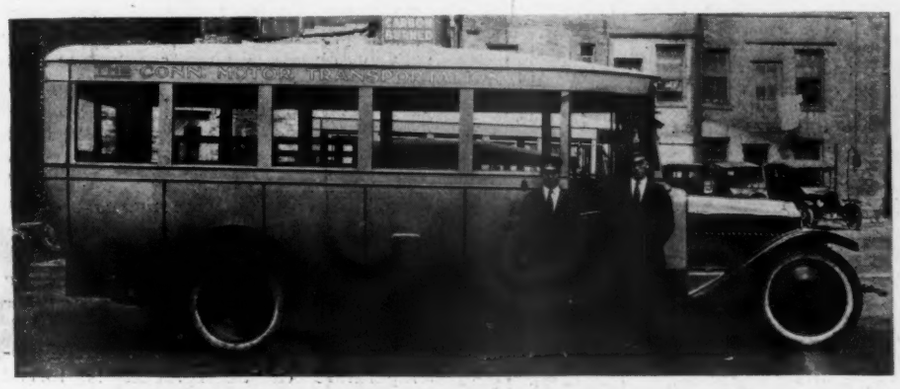
The first Whites, three 15-45's and three 50's were placed in service in June, 1922. In August of that year two more 50's were added, making a total of eight. During the last few months five have been added.

The writer regrets that detailed cost figures were not obtainable as it is not the policy of Mr. Geer to give out figures. He did state, however, that it cost 28 2/3 cents per mile.

Capacity Loads Quite Regular

The writer visited all three terminals and spent some little time noting the traffic, etc. As a rule each bus carried a capacity load. While no figures were available as to the earnings of the company, the writer questioned a number of persons who should know something about the concern. It was the concensus of opinion that the lines were profitable. One man stated that the stock paid a 20 per cent dividend recently.

This much is proven, however. The buses have been able to maintain a schedule during the winter and build good will. This sustains the contention that motor buses can give dependable service throughout the year. It is rumored that the company will establish another line which will form another link in the chain of cities served.



This Bus Has Travelled Over 100,000 Miles

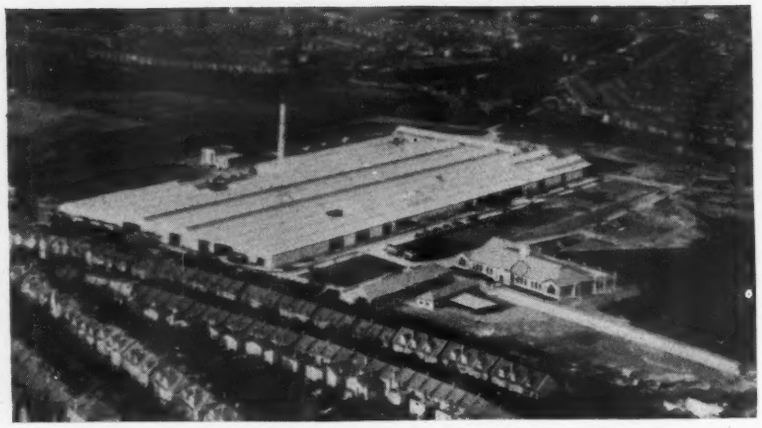
One of the original units of a fleet of six buses in the service of the Connecticut Motor Transit Company. The drivers are uniformed and are all high-grade operators.

Pennsylvania Rubber Employees Picnic

Employes of the Pennsylvania Rubber Co., of Jeannette, Pa., participated in the 20th annual picnic of the company at Oakford Park, Pa., August 18. The picnic is always one of the largest gathering of its kind in that section and does much toward the cementing of a better understanding between employer and employe.

Keeping Three Thousand Motor Buses in Repair is Industry in Itself

ABOUT fifteen years ago the motor bus established itself in the streets of London and since that time has developed so that today with a fleet of 3000 buses the London General Omnibus Company carries Londoners to almost every important market town and village within a 30-mile radius of central London. With its allies, it covers 1500 miles of road, its vehicles travel more than 100 million car miles in the year and the annual number of passengers run up into the thousand millions. It is claimed that the plant built for the overhaul and reconstruction of these buses is the most modern lay-out and progressive system in the world.



Aerial View of the Motor Bus Repair Plant

The works extend over 31 acres of ground, of which the buildings cover more than half. Thirteen acres are actually under cover. The main building occupies an area of some 300,000 sq. ft. In the works the motor bus overhaul, formerly discharged in between thirty and forty different garages scattered all over London, is now concentrated in one establishment.

Before the works were in full swing the average time for a complete motor bus overhaul was sixteen days, and this was a standard generally held to represent the greatest possible speed consistent with efficiency under the old conditions. The new system will reduce this time to four, while reconditioned vehicles are brought back into service four times as quickly as before. The works are laid to accommodate a weekly total of a hundred units nominally, but the system is elastic enough to enable the executive to handle during short periods 120 vehicles weekly. Employment is given to about 2000 people.

Vehicles Entirely Dismantled

Vehicles for overhaul are driven to the plant under their own power. Turning in at the entrance gate they run into the factory on the marked ways to the body-demounting shop. The first operation is the removal of the bolts holding the coach work to the chassis. A multiple hydraulic jack swings into position and the coachwork is lifted clear, the engine running throughout the operation. The chassis leaves the demounting shop and continues its trip round the plant to a second gate.

Both chassis and coachwork, on first entering the plant, must be, successive stages completely stripped, reconditioned and repainted. Eventually the reconditioned coachwork reaches the mounting department as the completely overhauled chassis leaves the works for its road test. The two entirely different sections have worked inwards, and come together, in the end, at exactly the right moment.

An electric trolley takes the place of the chassis in the demounting shop and the body is carried into the factory proper. Here there is accommodaion for 104 units. The bodies are first completely stripped and then reconditioned so far as their main components are concerned. Following these operations they pass into the paint shop, where there is accommodation for 57 units. The whole of the body painting is done by hand. The coachwork, in fact, is painted four different colors, but no good system has yet been devised whereby one part can be covered, as it must be covered, before any spray process can be used. The painting completed, the body passes into the mounting and finishing shops, where it is fitted with cushions, aprons, boards and advertisements while the electricians complete the wiring and electric fitting.

Parts Automatically Cleaned

When the chassis has reached the engineering department the engine is stopped and the gas tank is emptied and the fuel drained by an underground pipe into the main storage tank. As each chassis part is taken out, it is moved, by rollway or conveyor, according to its size and completely dismantled. Each part is tested and inspected before it goes down the line of workers. Radiators, bonnet-boards and petrol tanks are the first components to be dismantled. A special washing machine makes possible the perfect cleaning of parts that have become grimed and greased by a year's work. This machine takes the form of a big-diameter tunnel, carrying, on its inner diameter, coiled piping perforated with many thousand of ⅛-inch holes. A high-temperature caustic solution is forced through the perforations by means of a pump, the result being that thousands of high-velocity jets play on every part, from

One Day's Output of Reconstructed Motor Buses

Hydraulic Lift Gear for Bodies

every angle, as the part passes through the tunnel on an automatic conveyor.

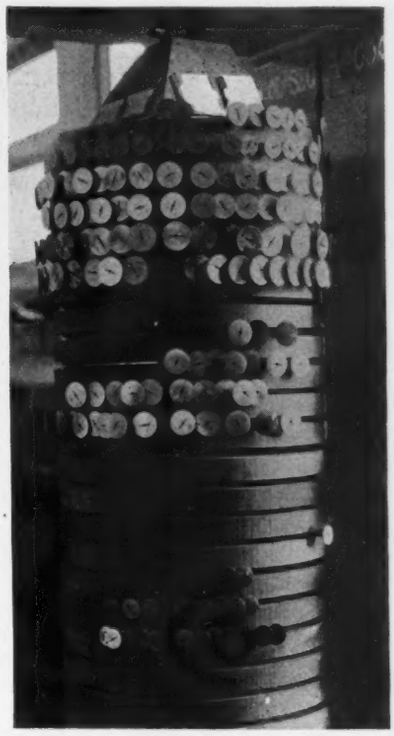
Springs Retempered

As the chassis passes along the shop it is gradually stripped of engine, clutch, gearbox, brakes, back and front axles and steering gear, and all other fittings, down to the bare frame. The wheels go into a special shop for new tires. The springs are reheated in a double-ended reverberatory gas furnace with a capacity of 120 springs a day, partly because it is impossible to detect incipient cracks without such treatment, and partly to remove the fatigue brought about by months of wear, also for retempering. After tempering, each spring is tested to a fifty per cent overload. After the frames have been inspected, repaired and passed as fit for further service, the retempered springs are mounted and reassembling begins. As the frame passes along towards the main moving platform which runs practically the full width of the shop, front and rear axles are also being reassembled until, when they actually reach the main conveyor, they practically fall into position.

Once on the main platform rebuilding is chiefly a matter of bolting the various units into position. The total length of the platform is 220 feet and one may walk up the full distance and see, in the course of an hour or so, a chassis completely assembled. As the frame and transmission nears the end of the platform the time arrives for the engine installation. A boring, reaming and running-in machine is installed centrally between where the engine is first taken from the chassis and the point, where completely rebuilt, it joins up on the moving platform. This machine was designed in the shops of the plant and it reduces what was formerly a two day task for skilled fitters to a twenty minute job for a machinist.

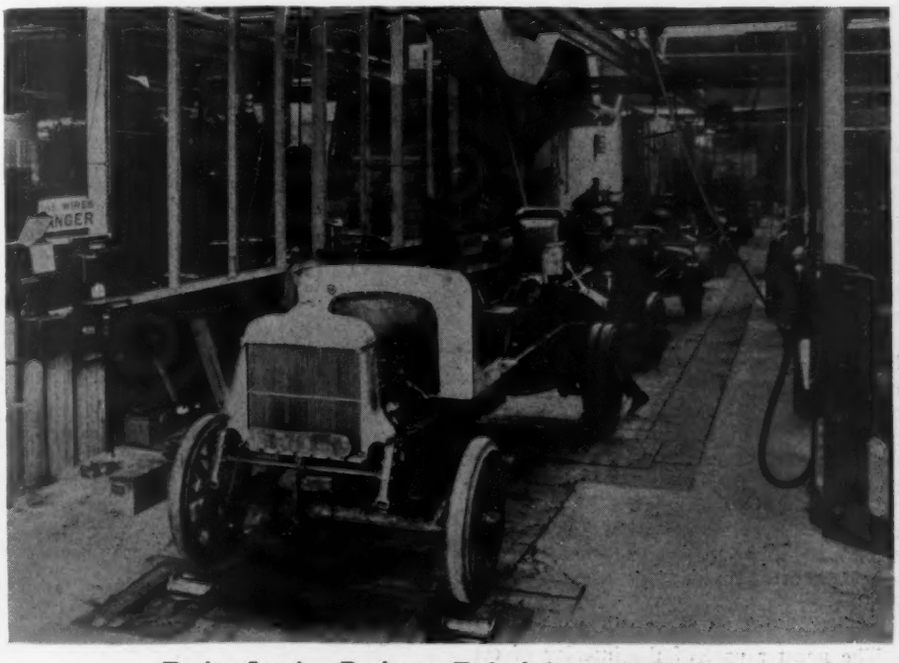
With the remetalled bearing bolted down in position exactly as when the crankshaft is installed, the whole crankcase is gripped in a jig which makes the ordinary lengthy business of lining up unnecessary. The boring bar is sent through, jig and job together are swung over to the second arm of the machine and the reamer is started. Then the top half of the lining is removed and the actual crankshaft to be used in the engine dropped in, the lining is replaced, and the machine starts its last operation of "running-in" the shaft.

When the chassis is completely erected and the gas tank is filled, it is passed on from the platform to a position where the engine is started by a machine operating through the rear wheels, and the unit leaves the shop under its own power for the first test run. Outside the works testing roads have been built, with a rough surface and with grades which will allow tests of the brakes and pulling power to be as severe as possible. After tests have been made and approved the chassis runs on to its registered track, the coachwork has preceded it by an electrical truck, and is held in position on multiple hydraulic jacks similar to those used for dismounting the body in the first place, but in this case the heads have each some degree of universal play to allow for any slight lack of register in the bolt holes of coachwork and chassis. The nuts are screwed in place on the holding-down bolts, the battery terminals are coupled up for final tests before submitted to the Police passing station, a clean sheet from the authorities being required, and the vehicle is ready for another 3000 miles of service.



Unique Method of Shelving Valves

This revolving carrier accommodates all sizes of engine valves, keeping them from becoming scratched up or dented, and facilitates handling. The carrier can be revolved in an entire circle, enabling the stock man to readily obtain any valve desired.



Engine Starting Device at End of Assembly Platform

Union Motor Bus Terminal

An Indication of the Rapid Development of the Motor Bus, and Its Utility and Acceptance by the Public is Reflected in the Erection of the New Cleveland-Akron Terminal

The Attractive Front of the Cleveland-Akron Terminal. The Front Although Large and Attractive is No Gage of the Vast Floorage Within

CLEVELAND, Ohio, has just put into service a new motor bus terminal in the down town district from which it is expected that within the next few months, a schedule will be made up which will call for a motor bus to leave once every minute. To such tremendous proportions has motor bus transportation grown in the Cleveland district in the space of but a very few years.

The new building is of brick, steel and concrete, modern to the last detail, and has an area of 14,000 square feet devoted to motor bus terminal facilities. It was designed and built under the supervision of Miller & James, architects.

Fronting on Bolivar Road only a few doors from East Ninth St., it is in the main business district, yet close as it is the operating company is already considering the operation of free shuttle cars from the public square, only a few blocks away, to transport bus patrons to and from Cleveland's big street car terminal district.

The new terminal has an attractive brick front, two stories in height, with two rental stores on the ground floor and office rooms above for the operating company, bus organizations, etc. Two immense doors, at either side of the front, provide for entrance and exit of the buses.

These doors are 12 feet wide and 18 feet high, giving wide clearance all around, and huge rolling steel shutters, electrically operated, are provided for use in winter weather.

No Post to Interfere

The greater part of the interior of the building is given over to space for the incoming and outgoing buses, and that there might be no posts to interfere with their free turning, the roof in this portion is supported by huge steel trusses 72 feet from wall to wall. The roof, to secure lightness, is made of corrugated steel, covered with asbestos.

Immediately in the rear of the store space at the front of the building are two concrete wash racks, very modern in their equipment. Concrete curbs are built into floor to guide the bus wheels properly, and pits and drains are provided. The equipment of these wash racks includes 24 brilliant electric lights for illuminating all parts of the buses while being washed, nozzles and sprays and mixing valves for hot and cold water, air lines for kerosene spray for cleaning greasy parts of the buses, and an electrically driven fan for quick drying.

Gasoline and oil supply is located near these racks for quick refueling of buses.

Heating and Ventilating

Heating and ventilating the building was a problem the architects seem to have solved very well. The exhaust gases from the large number of motor buses will be sucked out of the building by a huge electrically driven ventilating fan mounted in a chamber above the ceiling, and having several intakes, though it is anticipated that this will only have to be used during the winter months when all doors are closed.

Heating is to be accomplished by three units heaters, each containing a fan and three Vento radiator coils. By means of dampers these units draw in fresh air, which is forced over the heating coils and out into the garage. When advisable, a certain proportion of the garage air may be admitted to these heating coils along with the fresh air from outside.

The floor of the terminal is of concrete reinforced with wire mesh, is of extra strength and is topped with a hardened surface that keeps it clean and dust proof.

The repair shops of the operating company are located on the west side of the building, and separated from the main part of the building by three steel covered sliding doors, which move on a railroad rail embedded in the concrete floor.

Entrance to the Interior is Through Ample Sized Doors

The repair and maintenance shop is fitted with the most modern machinery and equipment, including overhead crane and other machines to cut upkeep costs to the minimum.

Shower baths and lockers for the men will be in this department.

When in full operation an electric bulletin board showing the time of departure of buses will be installed in the well appointed waiting room.

Center of Bus Activity

The new terminal, known as the Union Motor Stage Terminal, is under lease to The Cleveland-Akron Bus Co., the oldest and most succesful of the larger bus companies in the Cleveland district. All motor stage companies centering in Cleveland have been invited to make this their terminal, and to date the following have signed contracts and are using the depot.

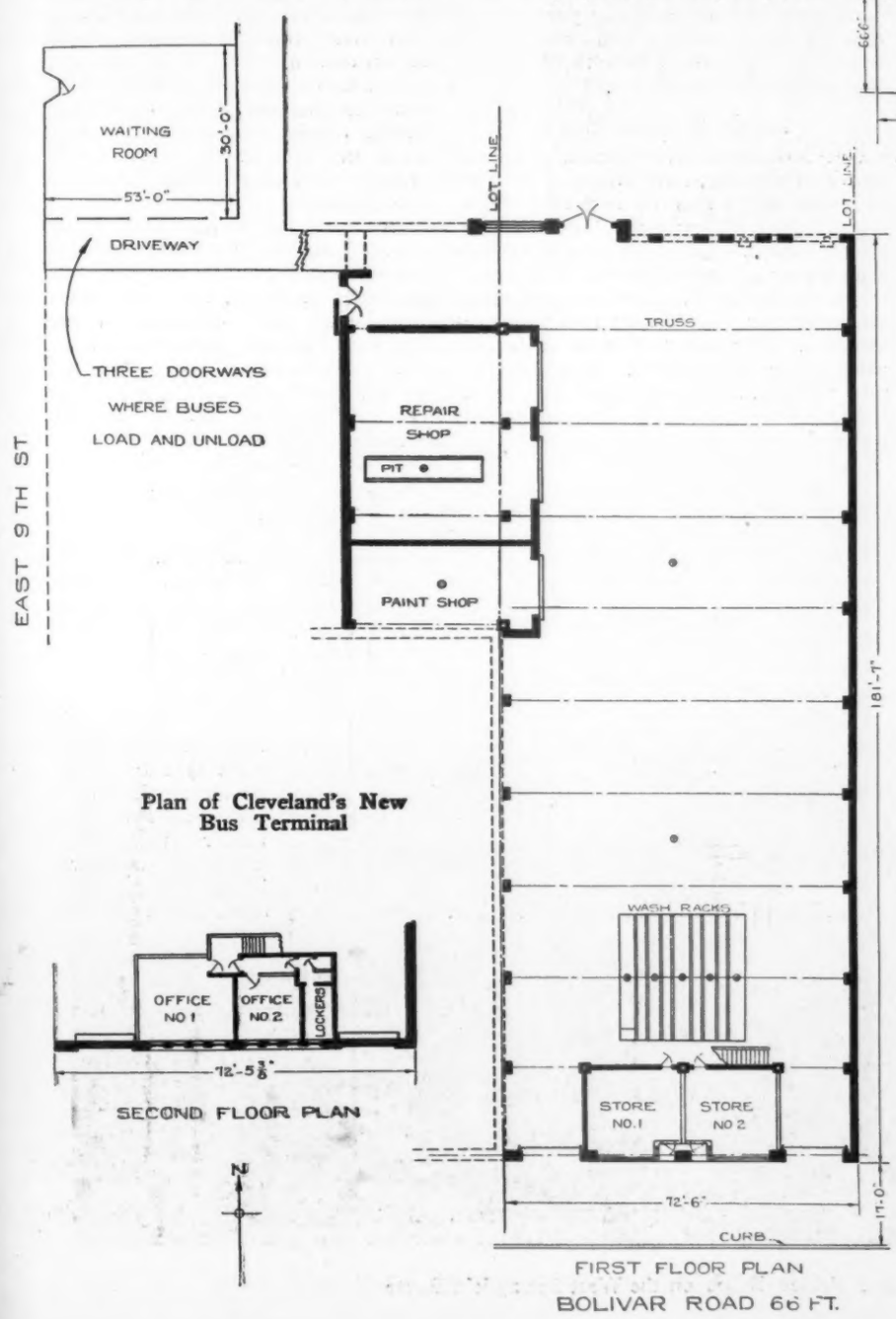
Cleveland-Akron lines; Cleveland-Youngstown and Warren lines; Cleveland, Ashtabula and Conneaut lines; Cleveland, Elyria and Toledo lines and the Cleveland, Lorain and Sandusky lines.

Cleveland motor bus authorities state that there has been more motor bus development in the Cleveland territory in the past year than in all the previous years put together. It is estimated that over 100 buses enter and leave Cleveland daily, with an average daily haulage of 100 passengers to the bus.

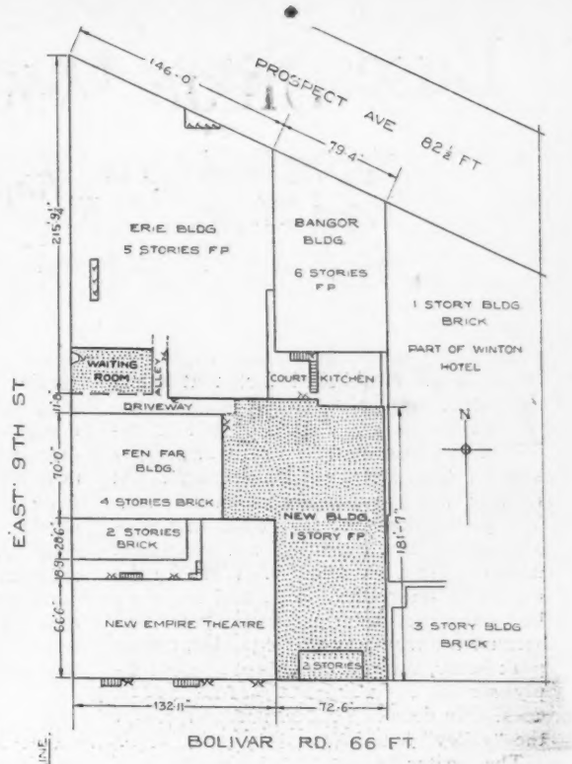
H. H. Moore, manager of the Cleveland-Akron Bus Company, lessee of the building, is the man who has made the present terminal possible. He was formerly in the motor trucking business and during the war saw the possibilities of passenger transportation by motor bus. He formed the Cleveland-Akron company in 1919, and the first buses were run May of that year. Five buses were used, and a schedule calling for departures every two hours was maintained.

Today the company maintains a half hour schedule, with 75 White buses in operation. The line is heavily patronized on all its three divisions, and is successful financially.

Cleveland today has a motor stage depot said to be second only to the depot at Los Angeles, the cradle of motor stage transportation as this country is now coming to know it.



Plan of Cleveland's New Bus Terminal



An Idea of the Terminal Size is Obtained From This Plan of Surrounding Sites

Auto Caravan Carries Its Own Power Plant

One of the interesting features of the fifth annual tour of the Michigan Tours Association, which during August journeyed in passenger cars and trucks from Horton Farms, Adrian, Mich., to Washington, D. C. and return, was the unique method of providing lights for the 1000 tourists when camp was pitched for the night.

At dusk each day the cars turned into a roadside camp site forming regulation streets. On these streets poles were placed bearing electric lights. Two portable Delco-Light outfits, mounted on an Oldsmobile Economy truck were attached by cable to the illumination system and a brilliant light provided. The Delco plants also generated sufficient power to operate a portable moving picture outfit.

Buses Serve Outskirts of Springfield, Mass.

Springfield Street Railway Company Puts Buses in Service Even Though It Knows From the Start That They Are Not Going to Produce a Profit. Cheaper to Operate Than Trolley

By C. P. SHATTUCK

IT is an established fact that many street railways companies operate certain lines of their system at a decided loss in their endeavor to give service. Cost figures of the average street railway company will substantiate this. The public does not take costs into consideration. Mr. Citizen is not interested, unless he is a stockholder. What he demands is transportation to and from his home at a cost per trip. He imagines that because the trolley is over-crowded, during peak hours, the railway company can supply service at a much less rate that it does. He does not concern himself about the "valley" load.

The writer is not attempting to produce a case in favor of the street railways but after a careful anaysis, including cost figures, he believes that neither the trolley or the motor bus can be operated at a profit on lines where the travel is light and where "undeveloped" sections **must be served.**

The development of outlying sections of a city, has brought with it problems for the street railways. The cost of laying track, the cost of new equipment and maintenance expense does not warrant the operation of electric trolleys. But service must be rendered. Therefore many electric car companies have turned to the motor bus as means of keeping the cost per mile as low as possible. In many systems investigated, it has been found that the cost per mile by bus was considerably less than it would be by trolleys on the routes referred to.

The bus lines of the Springfield, (Mass.) Street Railway Company is an example of the service and cost angles. In common with other cities a great deal of development is going on in the outlying sections and which are not served by the trolley. Such a section, about 2½ miles from the center of the city, demanded service. **There were trolley lines practically paralleling the section but none near enough to met requirements.** To supply service the railway company purchased a Stewart 2-ton chassis and mounted a conventional passenger body thereon. The line was established May 1.

Leaves Heart of City

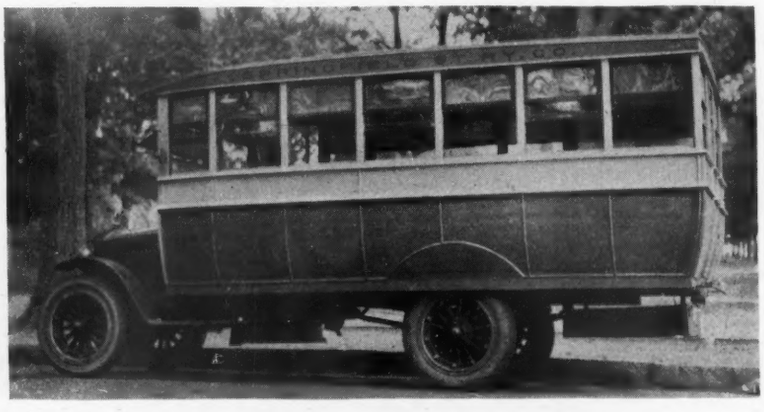
The bus leaves State street, near the center of the city, and crosses a number of trolley lines on its trip to the suburb in East Springfield, ending at the Hamburg street section. On its return it makes a loop near the city terminal. The round trip totals five units. The bus is operated 10 hours per day, on half and hourly schedule, the round trip is made in approximately 30 minutes. The average total mileage, Sunday excepted, is 75, and a factor which explains to a great extent the loss is that the bus serves as a feeder to the lines crossing its routes. Free transfers are issued by these lines.

An average or normal month's operation is indicative of the traffic, etc. The best day of the month the bus carried 166 cash fare passengers, and 60 transfer passengers. It issued 106 transfers. The average number of passengers carried per trip is 15. It will be readily seen that with the light traffic, and free transfers, that the bus cannot be operated at a profit.

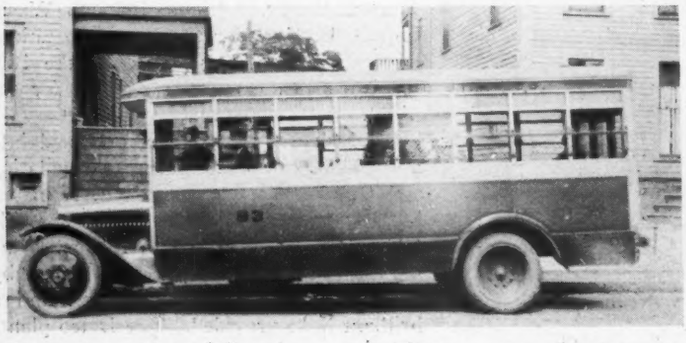
One of the executives of the company permitted the writer to go over the cost sheets, which showed that no charge is made for much overhead included in the operation of the electric lines. The charges were of the fixed and variable type.

The figures for the month of June (an average month) show that the bus was operated 251 hours, travelled 2289 miles and carried 6367 cash-fare passengers. The cost per mile was 21.3 cents. The earnings were $326.26 and the total expenses, which are not given in detail, were $488.38. The net loss was $182.59 (the difference being on investment, etc., not included in the figure of $488.38). The net loss per mile was 7.98 cents.

In speaking of the costs, etc., the executive said that it was known at the time the bus was placed in operation that it could not be operated at a profit, that the loss was anticipated. "The bus was placed in operation to render service although we regret that the public on the line does not recognize our efforts to render them service." There is another outlying section, some four miles from the center



Stewart Bus at Start of East Springfield Run



White and Selden Buses on the West Springfield Route

of the city, where another bus line will doubtless be operated and this, too, will not show a profit. But the loss per mile will be decidedly less than if an electric line were to be constructed.

The Springfield Street Railway Company's other bus line is making a better showing financially because of a heavier traffic. This line, which includes a White and Selden, operates over the new bridge over the Connecticut river and serves West Springfield which is without service to Springfield because of a municipal condition relating to rails over the bridge. In order to give the residents of West Springfield service, the buses were placed in operation and give service up to 11 p. m. The round trip is 1½ miles.

The White and Selden alternate daily and during the month of June, a representative month, the buses traveled 3340 miles, operated 574 hours and carried 26,561 passengers. The Selden operated 1410 miles or 247 bus hours and carried 11,339 passengers. It earned 36.22 cents per mile and the cost per mile, total expense, was 39.67 cents.

The White ran 1930 miles, was operated 327 bus hours, carried 15,222 passengers and the earning per mile was 35.1 cents. The cost per mile was 30.39. This shows a net income of 4.71 per mile but in reality with other cost factors not included in the cost figures of 30.39 cents the loss per mile was 1.54 cents. It should be remembered that the figures, while of an average month, may not indicate actual conditions as the variable costs will fluctuate.

In conclusion it may be said that while the buses on both routes are not showing a profit they are providing service and are costing the railway company considerably less per mile or month than if trolleys were operating over the same routes. It is also evident that the system of issuing free transfers greatly reduces the actual revenue. This is particularly true of the first described line, where the light travel outside of the morning and nights is responsible for the loss. From a service and cost reducing standpoint, the buses are profitable.

Economical Hauling in Small Towns

A COMBINATION truck and trailer outfit in its application to economical haulage in the small town has been devised by F. S. Pool, manager of the truck division of the Pence Automobile Company, General Motors Truck distributors at Minneapolis, Minn.

The outfit consists of a one-ton G. M. C. truck with removable body, with a fifth wheel fitted to the truck chassis beneath the body, so that a Wolverine semi-trailer may be used when the body has been rolled off the truck.

handled with this outfit may run 2½ to 3 tons without in any way overloading the truck.

The construction details of this outfit are interesting, and may well be copied elsewhere by motor truck dealers who are endeavoring to meet certain haulage conditions that call for economical solution.

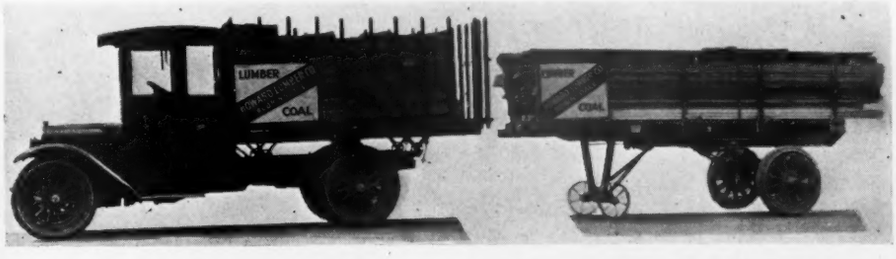
To support the angle tracks on which the removable body rolls, several 4-inch channels are placed transversely on the many miles into the country, and loads side frames of the truck chassis. On top of these , and fastened securely to their upper flange, are placed two angle tracks, made of 2¼ in. x 2¼ in. x ¼ in. steel angles, with the inner face of the angles toward the center line of the truck. These confine the body rollers properly, and provide a track for them to run on as the body is put in place or removed.

A ten foot body is mounted on suitable rollers for use in milk hauling, and the trailer used with this outfit has a platform 14 feet long, fitted with stakes and with lumber handling rollers made by the R. B. Roller Body Company. Its capacity is rated at 4 tons. It is fitted with automatic braking arangement.

The General Motors truck used with this combination is fitted with a two-range transmission gear, and two extra leaves were put in the rear truck springs to care for the extra load hauled at times.

The outfit has been entirely successful, and has been a money-maker for its owner from the first.

It is a good example of what a truck dealer may do in devising ways to furnish economical haulage to fit certain conditions. There should be more of this kind of constructive work among truck dealers.



The Combination Truck and Trailer Unit Devised by F. S. Pool

L. H. Leckner, a drayage and transfer man located at Robbinsdale, Minn., is the owner of the outfit, and it has proved highly successful in providing a wide range of haulage capacity at an economical cost.

Mr. Leckner has two other General Motors trucks, of two-ton capacity, which he uses in general transfer work and in hauling milk from farms to the creamery at Robbinsdale.

The one-ton combination outfit, with removable body in place, is used for hauling milk from the country up until about ten o'clock each day. Then the body is rolled off onto a platform level with the chassis, and the truck is backed around under the semi-trailer connection, and is ready for practically a full day's work on much heavier hauling.

With the semi-trailer attached, lumber, shingles and cement are the principal commodities handled, these being delivered from a supply house in Robbinsdale. Much of this material is delivered

Covers More Territory and Satisfies the Taxpayers

Farmington, Me., although of about 3,000 population, has quite a number of miles of dirt highways. Formerly the streets were sprinkled during the summer months by two two-horse teams until the town selectmen were interested in a GMC truck with tank and sprinkler. The truck not only eliminated the horses but one man. It covers all the former routes and in addition has taken over more highways. The selectman in charge of the truck said that it had proven very satisfactory as the work was done much quicker and better, and that the tax payers were satisfied. No cost figures are maintained, but it is stated that the service was so good that the taxpayers were not interested in the cost figures, and that the costs must be less when all factors were taken into consideration.

Buses and Equipment to be Exhibited at A. E. R. A. Convention at Atlantic City, October 8th to 12th

Westinghouse Automotive Air Brake

The Westinghouse Air Brake Co., Wilmerding, Pa., has developed an air brake equipment suitable for use on all types of automotive vehicles, and this is now operating successfully on a great many buses, trucks, and passenger cars.

The fundamental characteristic of this equipment is that, instead of the usual method of applying muscular force by the foot of the operator, the brakes are set by the force of compressed air acting in brake chambers connected to the brake rods, and controlled through either a hand-operated, or foot-operated, valve. The usual foot brake and hand brake are both retained on the vehicle, however, and their operation is not in any way impaired by installation of the air brake.

The Westinghouse Automotive Air Brake provides a braking force which is powerful enough for extreme conditions while possessing the desired rang of effectiveness. A maximum force as well as a lower force for less severe conditions is available.

The Automotive Air Brake is simple, of few parts, and is easily maintained. The weight of the equipment varies from 30 to 60 lb. depending upon the type of car and the service. Application is not difficult and can be readily made. For equipping vehicles now in service, a few installation stations have been established.

Any air brake equipment fundamentally comprises means for creating, storing, utilizing and controlling, the source of power—compressed air. With the Automotive Air Brake the source of pressure is the engine itself. A steel reservoir of ample volume is the means for storing the air, as well as cooling it to precipitate moisture, which may be drained off by means of a cock provided for the purpose. The means for utilizing the force of compressed air to control the vehicle, is a diaphragm brake chamber connected to the brake rods, two of them usually being employed. A control valve, either hand or foot operated, serves to direct the flow of air from the reservior to the brake chambers, and to govern the degree of pressure obtained.

Accumulator

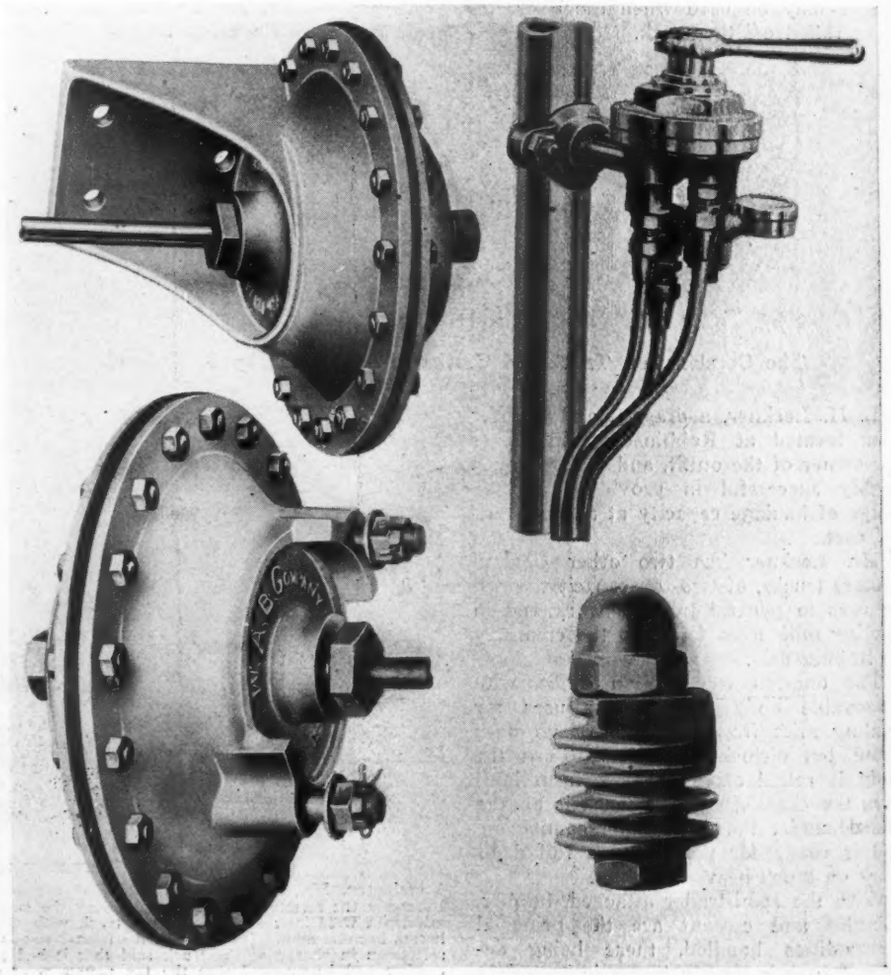
The first element in the brake system is the accumulator; a special form of air-cooled check valve which is attached to the engine cylinder, generally in place of a pruning cock. When the engine is started a small amount of "air" under both the compression and explosion pressures discharge into the storage reservoir from the cylinder equipped with the accumulator. As the pressure rises, the compression stroke ceases to contribute to the storage supply, and when a high pressure is attained only the peak pressure of the explosion is sufficient to lift the accumulator check valve. As this is maintained for only a small fraction of the power stroke and the amount discharged is small, there is practically no reduction in the power delivered to the piston or any noticeable unbalancing effect created. In spite of the small amount of air diverted from each stroke, ample pressure is soon obtained to adequately control the car. If no brake applications are made after the reservoir has reached full pressure the engine ceases to discharge gas into the reservoir, since the back pressure seats the ball check valve in the accumulator. When the reservoir pressure drops due to the application of the brakes, the Accumulator functions again and the pressure is restored.

One or two accumulators are used, depending upon the size of the vehicle and the severity of the service in which it is to be used.

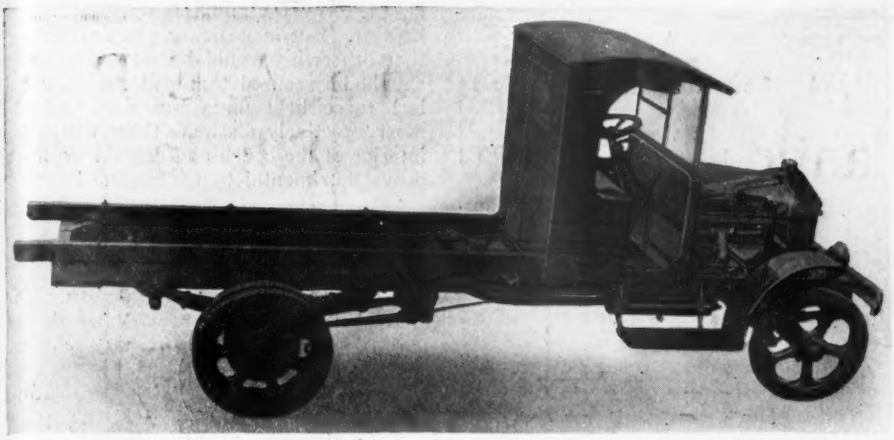
Control Valve

The control valve for operating the brakes works in a similar manner to the spark lever or accelerator, and requires no more muscular effort.

The control valve is of the regulating type and so designed that in admitting air from the reservoir to the chambers which directly apply the brakes a certain pressure will be established corresponding to the position of the control valve lever, and irrespective of any excess pressure which may exist in the reservoir. (A pressure of about 30 pounds may be created by the average engine when it is idling, but if it is working hard the pressure may rise in some cases to 200 pounds.) The farther the control valve lever is moved from its release position the greater will be the pressure in the brake chamber up to the extreme, or emergency application, position of the lever. Whatever position the lever is placed in the pressure corresponding to that position will be realized and auto-



Close-up of the Various Units Making Up the Westinghouse Automotive Air Brake



Phantom View, Showing Installation of the Westinghouse Air Brake System

matically maintained in the brake chambers. Any desired pressure having been built up in the brake chambers, a graduated release may be effected at will by suitably returning the control valve lever toward its release position. The pressure may be controlled to a very fine degree between the minimum and maximum, and can be released instantly or gradually as conditions demand.

There are two types of control valves available, the hand-operated and the foot-operated. The former is standard equipment for trucks, while the latter is standard for buses.

Brake Chamber

The brake chamber comprises two dished plates, between which is a diaphragm made of two heavy layers of a special live oil proof rubber composition, moulded with an inserted layer of fabric. One side of the diaphragm is connected to the control valve; on the other side is a plate with a push rod attached and connected to the brake rigging. This connection is made in such a way as to secure the proper travel of the brake rod and the development of the desired force, and also so as to not interfere in any way with the efficiency of the existing hand or foot brakes.

Metal-Lined Brakes

A further development is the metal-lined brake rigging, for use with Automotive Air Brake, and especially advantageous for severe bus service. This brake rigging consists of two steel shoes in each rear wheel, bolted to steel shoe heads, and bearing against a steel liner which is bolted to the brake drum. The shoe heads are hinged on a large anchor pin supported by the spring seat casting. A 180 degree constant-lift cam, supported on a tubular shaft, is used to operate the shoe heads. The brake chamber, one for each side, is mounted on a bracket attached to the axle housing, its push rod being connected to a lever mounted on the cam shaft. An auxiliary lever is provided for the hand control connection.

The Indian import duty on accessories for motor trucks is 15 per cent ad valorem, on passenger cars and motorcycles 30 per cent ad valorem, but if for use on both trucks and passenger cars the duty is 30 per cent ad valorem.

Heywood-Wakefield Bus Seats

Heywood-Wakefield Company of Boston, will be one of the exhibitors at the October convention to be held in Atlantic City. This old New England concern has been manufacturing merchandise for 97 years and holds an enviable position for quality merchandise. There are seven factories in the United States and Canada producing Heywood-Wakefield products and eleven warehouses.

The accompanying illustration show three of the different kind of seats manufactured for motor buses. Other will be exhibited showing just what seats Heywood-Wakefield makes for buses used in long and short hauls and for electric cars, both city and interurban service as well as seats for one-man cars.

The best type of springs are used in its seats, a special effort being made to produce a good spring edge cushion where most seats are more or less uncomfortable.

Seats are upholstered in cane, leather, imitation leather and plush. Cane is most popular in electric cars and vies with imitation leather so far as motor bus seats are concerned. Few persons realize when seated on cane upholstered seats that the cane comes from far off Borneo. Cane in its raw state is known as Rotan. Rotan vines wind their way snakelike for about 500 feet through the wilds of Borneo. These vines vary from one-quarter to two inches in diameter.

Natives cut the vine near the root and permit them to dry before removing the outside bark. Then they cut the center of the vine into lengths of about 18 feet and call these "Rattan." The Rattan is bundled and exchanged to Chinese merchants for food, dishes, clothing, etc., money having no value to the natives of Borneo. The Chinese merchants then sell the Rattan to buyers, Heywood-Wakefield having a permanent buyer at Singapore.

The Rattan is shipped to Wakefield, Mass., where it is split into two commercial articles, the outside being known as "Cane" and the inside or heart as "Reed." Cane is used for seats and backs of cars seats and household chairs as well as in furniture for decorative effects. Reed is used chiefly in manufacturing furniture.

The cane is woven into webbing. Much of this webbing is used at the Wakefield factory for upholstering seats although a large quantity is sold direct to transportation companies. This webbing is furnished with or without canvas lining and comes in rolls of 200 lineal feet and in any width up to 48 inches. It is sold by the square foot and is very practical because it is durable, cool, comfortable and sanitary. It can be washed with soap and water without damage.

Three Types of Heywood-Wakefield Bus Seats

Foamite-Childs

Among the products to be exhibited by the Foamite-Childs Corp., Utica, N. Y., will be the Childs Soda and Acid Extinguisher, Fire-Gun Extinguisher, Foamite 40 gal. chemical engine, and Foamite CA Extinguisher.

This company manufactures all types of chemical fire fighting devices, portable, stationary and motorized. Proper fighting equipment to properly combat various types of fires is a matter of utmost importance. Valuable information pertaining to this subject can be obtained from the Foamite-Childs booth.

The Fageol Safety Coach

The Fageol Safety Coach, a radically unconventional vehicle that is fast gaining in popularity, is built complete by the Fageol Motors Company, of Oakland, California. This company will exhibit at the A. E. R. A. Convention the chassis and two body models, one for pay-as you-enter operation seating 29 passengers and the other a 22 passenger coach for fast service on long distance runs where stops are infrequent.

The features of this job are the extreme lowness of the body, floor height being only 20½ inches off the ground, the 70 inch tread and an aviation type Fageol-Hall-Scott engine developing 62 h. p.

The manufacturers state that 71 per cent of the coaches turned out of the Fageol plant to date are in use east of the Mississippi river.

The city or street car type has pneumatic tires, dual at the rear, long steel springs, and Gruss Air Springs, which, with the padded genuine leather seats, makes a car that rides particularly well, without pitching and tossing.

The inter-city model has full length cross seats with individual doors, partitions making separate compartments for ladies and for smoking, and the rear of the body has a baggage compartment with doors on each side.

Both models are fully equipped with all electrical equipment including lights; heating and ventilation are provided, as are also an electrical horn, buzzer signal to the driver; rear stop signal; vacuum-operated windshield wiper and a rear view mirror.

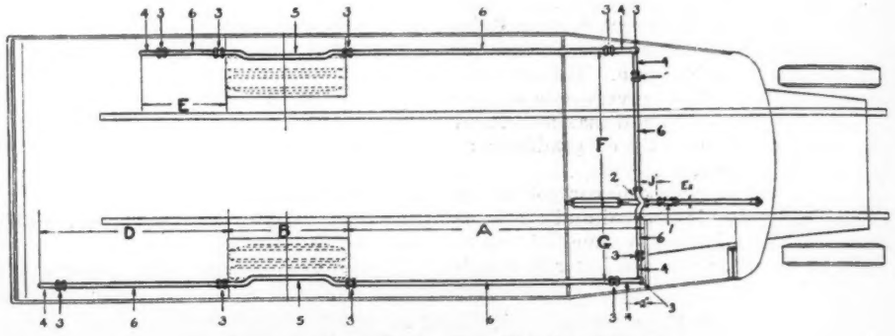
Another feature, which greatly reduces maintenance expenses, is the Ry-enamel finish on the body, which can be cleaned with hot or cold water or gasoline, and can be renewed in 24 hours.

The Fageol Motor Company also manufactures sight seeing coaches and parlor cars with individual wicker chairs, both of which will be shown at the Atlantic City convention.

The Double-Duty Petry Bus Heating System

That the heat of the exhaust can be and should be employed in the heating of motor coaches during winter operation is an economy that no bus operator should neglect. But in utilizing this heat energy that otherwise would be wasted a device should be secured that will not only collect these heat units but one that will most effectively dissipate them within the interior of the coach and one that will not prove detrimental to the engine by causing choking, back-pressure and overheating of the engine.

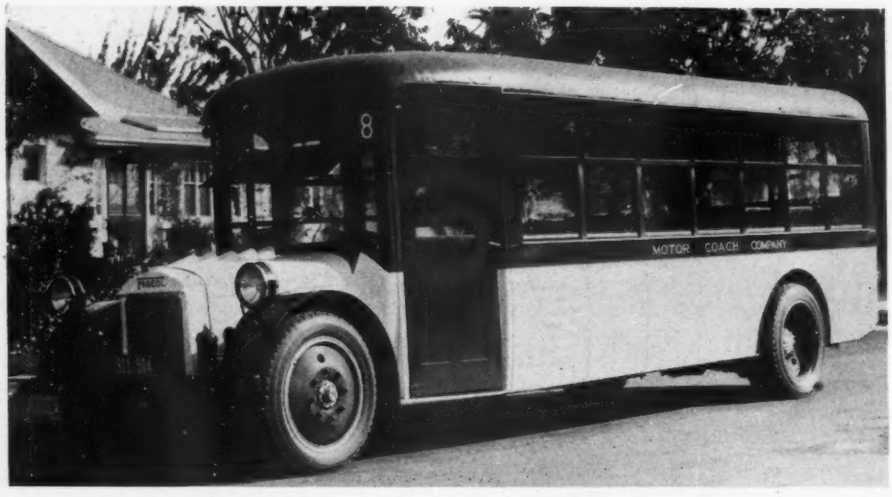
Close-up of the Petry Tuning-Up Valve



Layout of the Petry Bus Heating System

The N. A. Petry Co., Inc., 328-34 N. Randolph St., Philadelphia, is on the market with just such a bus heating system. This system known as the Petry is stated to heat the bus right, without odor or smoke and without any detrimental engine effects.

After considerable researching and testing, Petry engineers became confident that they hit upon a system that would prove their claims in every respect. Two distinctive features noted in the system are the Tuning-up valve, permitting complete regulation of the heat, and the special heat radiating seamless steel tubing. The smooth joints and the bends of large radius permits a free flow of the gases preventing back pressure and choking. The entire system is light in weight of easy installation.



Three-Quarter View of the Fageol Street Car Type Bus

Fageol Inter-City Type Bus

White Company's Exhibit

The White Company in its exhibit will feature its model 50 motor bus with chassis designed especially for passenger transportation. The company will have four buses on display showing a variety of body types. The bodies will include a 21 passenger deluxe, built by The Bender Body Company; a 25-passenger built by the Brown Body Corporation; a 25-passenger built by the G. C. Kuhlman Car Company and a 25-passenger built by the Hoover Wagon Company.

The company has secured eight of the regulation spaces in the exhibit hall giving it display space of 18 by 144 feet. In addition to buses the company also will display a two-ton White chassis equipped with winch and niggerheads, a type of truck widely used by electric railways and power companies.

White Model 50 Bus Chassis

In building a chassis solely for passenger transportation, it has been the aim of The White Company to produce a type of vehicle that will meet every practical requirement of both urban and interurban service. Model 50 has a number of features that are important in passenger carrying, important among them being the long frame, which makes it possible to mount a body seating 25 passengers comfortably. The loading height is low, only one step being required at the entrance.

Riding comfort has been given special attention. It is accomplished through the combination of a long wheelbase, a low frame and long flexible springs of the passenger car type.

To assist in giving the best possible results in both city and country service, Model 50 is designed to use two types of wheel and tire equipment—steel wheels and solid tires or disc wheels with pneumatic tires. With pneumatic tire equipment wheels and tires are dual in the rear. It is necessary to carry only one extra wheel and tire to provide for either front or rear change, for all wheels are interchangeable. The front disc wheel, when reversed, becomes one of the dual rear wheels, likewise either of the dual rear wheels can be used on the front.

The White Model Bus with Kuhlman body has the distinctive feature of being constructed largely of steel. The truss type of side construction is employed and consists mainly of pressed steel side posts riveted at the bottom to the angle side still member on each side of the underframe and at the top to the pressed steel letter board, also the Plymetl sheeting on each side and at the rear which is securely riveted to the angle side sills and the pressed steel side posts. Additional strength is imparted to the construction by the framing of the stationary upper sash on the outside of the body side posts. The three-ply moulded veneer Haskelite roof, which is supported on pressed-steel carlines and letter boards, is attached to these members by a special Kuhlman clamping method.

The Kuhlman body is constructed in three sizes, 21, 25 and 29 passenger capacity. The 25-passenger body as shown in illustration has an overall length of 18 ft. 5 in. Width of body, inside at seat cushions is 7 ft. 5 in. Kuhlman standard bus seats include light weight metal frames and imitation upholstered backs and cushions with spring inserts. An emergency door is provided on left side at rear, equipped with mechanical lock with handle under glass covering, which must be broken before the door can be opened.

The White Model 50 Bus With Kuhlman 25-Passenger Body

Interior View of the White Model 50 With Kuhlman Body

National Bus Window Fittings

The National Lock Washer Company, Newark, N. J., manufacturer of such national products as car window equipment, lock washers, hi-power nut locks, spring steels, and drop forgings has kept pace with the rapid development of passenger transportation both by rail and bus by concentrating on fixtures and devices in the particular field for which it is peculiary fitted. By bearing constantly in mind that the car window equipment receives the greatest usuage by the passenger of any car appurtenances this company has re-designed and improved its curtains, fixtures, locks and other window devices from time to time.

National Curtain Fixture

In this company's complete line are certain products particularly adaptable in motor coach construction. Among them is the National Curtain Fixtures, Nos. 151 and 151-E for use in connection with the National Curtain Roller No. 112. Another product is the Anti-Rattler No. 107, which is made of high quality tempered steel and may be attached to wood or metal sash by countersunk wood screws or rivets. This device effectively holds the sash away from the inner sash rail and tightly against the outer sash rail. It also acts

Views of the Sash Lock No. 137

as a preventative against the ingress of dust and cold to the car.

The National Sash Lock No. 137, illustrated herewith, is particularly adapted for buses. This sash lock has a straight locking tooth and in its use the sash stop face against which the sash lock rack is to be applied must be at an angle of ninety degrees to the face of the sash rail to which the lock is attached. Stops for lock are also provided.

A simple, inexpensive type of sash lift recommended by this concern for bus use is the Sash Lift No. 117-D. This lift projects ¾ in. beyond the face of the sash and may be used in connection with any of the types of National Sash Locks.

Mack Bus Will Show Shock Insulator

The Mack bus to be exhibted is known as the Mack Shock Insulator Bus. The electrical controls for the entire Mack bus chassis and body as well as the cowl ventilator control and heater control lever, are all conveniently located along the dash easily reached from the driver's seat.

In addition to the proven safety of the folding type door and step, the Mack bus is equipped with three well-placed grab handles, 5 stanchions, perforated metal safety treads on steps, and an automatic step light for use in night driving. The simple construction of the Mack emergency door lock makes it operative immediately. A substantial bumper in the rear also protects the body as well as the tail-light, stop light and gasoline filler. Besides the wide range of vision afforded the driver due to the bevel front construction, the cowl ventilator, windshield, visor and marker lamps are so arranged as to add to the pleasing design of the Mack bus exterior.

One of the distinctive features of the Mack bus is noted in the Mack Shock Insulator. Rubber cushions compressed in cast steel brackets are used in place of the customary steel shackles. The rubber shock insulator entirely eliminates the hinged steel shackle with its accompanying spring eyes, bronze bushings, hardened and ground shackle pins, shackle bolts, nuts and grease cups. The natural flow, or ability of the rubber insulators to adjust themselves (under pressure) to constantly varying road conditions relieves the springs of all undue twisting strains. It might be said that the chassis frame, including transmission, clutch and engine, literally floats upon eight insulators of live resilient rubber, which act like sensitive moulded jelly.

They have lessened chassis vibration, and have materially increased tire mileage, resulting in a marked reduction in the cost of general maintenance. This feature together with the added comfort of deep seat cushions, makes passenger comfort an important factor in Mack Bus construction.

Hoover Bodies Used on Newark's Bus Chassis

The Hoover Body Co., York, Pa., recently met the urgent call of the Public Service Railway Company of Newark, N. J. for bus bodies with its model 897, a popular type, with an initial order of nine units. This railroad company in urgent need of added facilities decided to operate a bus system in conjunction with their electric lines.

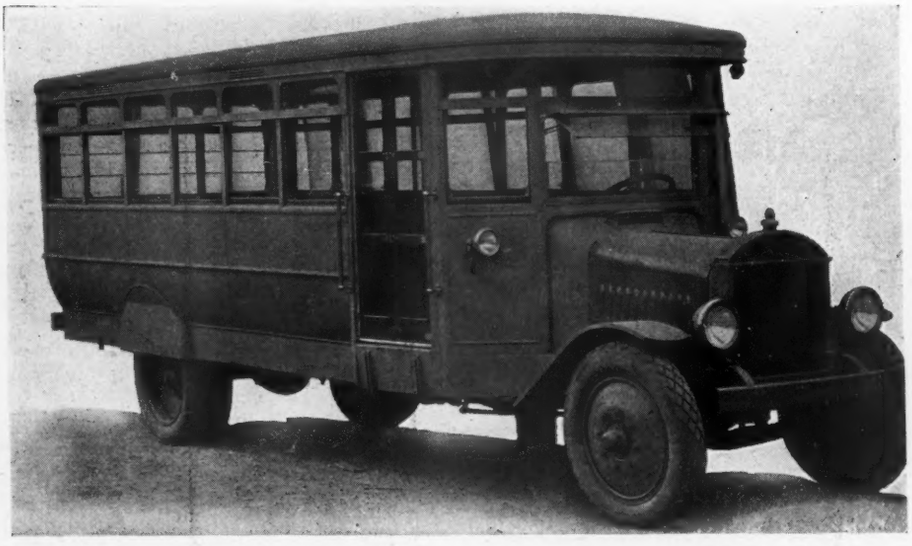
The bodies are of the type illustrated herewith with a seating capacity of 25 passengers. Although a height of 74 inches is obtained inside, the general impression is that of length rather than height. This fact is due to a special method of substructure which permits a very low center of gravity. This same framing not only brings the body closer to the ground, but is also designed to strengthen the understructure of the body, which is subjected to extreme vibration and shock. Throughout the whole body vibration has been dealt with successfully.

Another distinctive Hoover construction which is also featured because of its vibration absorbing quality is the roof construction, which consists of a combination wood and metal carline, to which is riveted the aluminum roof covering.

The color scheme includes the mahogany and white ivory interior finish, and an exterior of chrome yellow with dark brown mouldings.

This body is really a development, in which the experience of Hoover as body builders and the ideas and suggestions of their customers have been incorporated.

An Illustration of a Typical Hoover Job



Mack Bus to be Exhibited by International Motor Company

Rex Products to be Exhibited at the A. E. R. A.

The Curtain Supply Co., Elkhart, Ind., is manufacturing a line of supplies specially adapted to bus application, all of which will be exhibited at the A. E. R. A. next month. Included in the exhibit of the Curtain Supply Co. will be that of their Ring Fixture, Rex All-Metal Roller, Rex Metal Sash and Weather Strip.

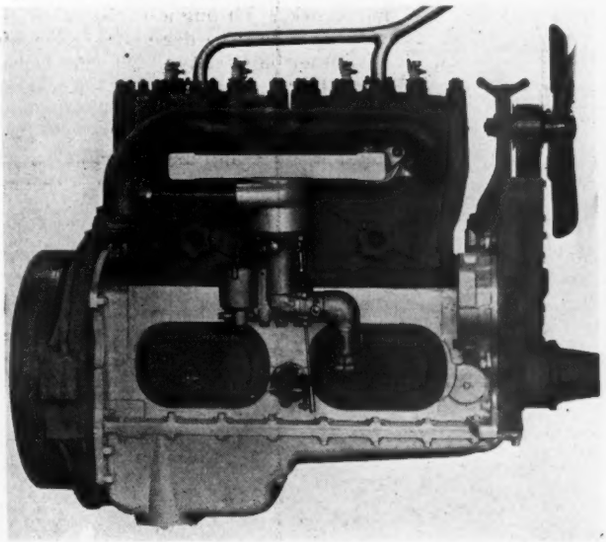
Rex weather stripping is weatherproof, dust and water tight, readily installed and requiring no maintenance. The brass sash exhibit will also be interesting from a standpoint of stated superiority over the ordinary wood sash. This sash has been proven under the most adverse conditions of traffic and climate.

In addition to the above a complete line of parts and equipment pertaining to the assembly of coaches will be shown.

Waukesha Engine Exhibit

The bus engines offered by the Waukesha Motor Co., Waukesha, Wis., do not differ much from their truck models in outside appearance but have many important changes in the working parts which are demanded by the conditions of bus service.

These engines have been designed chiefly to attain greater economy, power, and low maintenance costs. The company adopted the policy of spending an unusual amount of time on the road in developing these characteristics. Fuel economy depends on many factors which are not often considered. All known factors have been checked up on the road in respect to the economy available from each and as to the practicability in service. Such factors as higher compression ratio, shape of combustion chamber, location of spark plug were worked out with great care. The avoidance of hot spots in the combustion chamber, and the development of manifolds which produced the best performance on cold mixtures were proven on the block as well as on the road.



Carburetor Side of the New Waukesha Engine.

Turbulence in the combustion chamber was developed to its highest value and special pistons and rings were developed to keep the temperature of the piston surface at a minimum. The lubrication of valve stems was brought to great efficiency. Connecting rod bearing ends are ground to a perfect circle and fitted with radiated bearings which is claimed to keep the lubricant at the best possible viscosity.

The engines have been developed to cool by constant water temperature regulators and by the steam cooling system. The lubricating system is of the force feed type and the pressure is regulated to conform with load requirements.

Balance has been given thorough study and new and unique systems for balancing the running parts so as to produce as smooth a performance as possible at all speeds has been adopted. Engines for this service are built in the following sizes: 4 x 5¼, 4 x 5¾, 4⅜ x 5¾, 4½ x 6¼, 5 x 6¼.

SKF Exhibit

The SKF Industries, Inc., 165 Broadway, New York City, will exhibit at the A. E. R. A. Convention, occupying space No. 311. A range of Hess-Bright Deep-Groove and Skayef Self-Aligning Ball and Roller Bearings will be shown, also Atlas Balls of Steel, Bronze and special metals.

Unique Models demonstrating the anti-friction qualities of ball bearings will interest and amuse while a large Ball and Roller Bearing will show to advantage the workmanship and materials used in SKF marked Bearings.

The headquarters will be at the Marlborough-Blenheim and the following men plan to attend: W. L. Batt, President; S. B. Taylor, Asst. to President; R. H. DeMott, General Sales Manager; H. E. Brunner, Chief Engineer; J. S. Tawresy, Engineering Dept.; R. C. Byler, Advertising Manager.

Gruss Air Springs

Those attending the convention who are interested particularly in bus spring provisions will discover an interesting installation on both the White and Fageol buses which will be exhibited there. Both these buses will be equipped with Gruss Air Springs, manufactured by the Cleveland pneumatic Tool Co., Cleveland, Ohio. The action of these springs is strictly air controlled and direct, eliminating any necessity for mechanical control. There are no valves or by-passes.

In this connection the following item is worthy of note. The Pacific Electric Railway Co. is operating at the present time 81 Model 50, White buses and 40 Morelands equipped with Gruss Air Springs.

Timken-Detroit Exhibit

Although Timken-Detroit Axle Co., Detroit, Mich., will not have an actual exhibit of their axles at the American Electric Railway Association's Convention next month, interesting blue-prints, photographs and educational information under the direction of George E. Fox, Timken representative, will be shown to interested bus manufacturers and bus operators.

Lon Smith Joins Lubac Corporation

Lon R. Smith has become identified with the Lubac Corp., of Chicago, as general manager in charge of sales and advertising. Recently he has been employed as consultinging engineer for Bishop & Babcock Co.

Container for Schrader Merchandise

This attractive and effective merchandise container is specially for dealers carrying Schrader tire valve accessories. This display container, twenty inches in height, is a giant replica of the well-known Schrader Tire Pressure Gage.

At the rear of the container is a door which can be locked. Inside are eight compartments containing a small stock of Schrader Tire Valve accessories. Each article can be quickly and conveniently stocked and removed. Thus, the dealer can keep a supply of Schrader merchandise safely in a compact, convenient cabinet which facilitates service and saves his own time.

Schrader's "Silent Salesman" Display

This merchandiser, which is known as the No. 4657 Schrader "Silent Salesman," contains Schrader Tire Pressure Gages, Valve Insides, Valve Caps, Dust Caps with Rim Nut Bushings, Valve Repair Tools, Pump Connections and a Star Wrench.

Springlife for Spring Leaf Lubrication

The Springlife Co., 1809 N. 7th St., Kansas City, Kans., is the manufacturer of a new product claimed to revolutionize the present method of spring lubrication. It is known as Springlife and consists of an insert which is composed of a base of vulcanized fibre. To one side of this is applied graphite in hard wearing form and in such a manner that it will not wear off, but burnish and stand up under the weight of the load and action of the spring.

Showing Springlife Application

These strips of Springlife are cemented between each leaf of the spring with a waterproof cement.

The above company states that by placing Springlife in the position as shown in the illustration, which is at the point of friction in the spring, the leaves are separated from the end of the Springlife insert to the axle with the result that the whole spring is flexible and not subject to whip and throw.

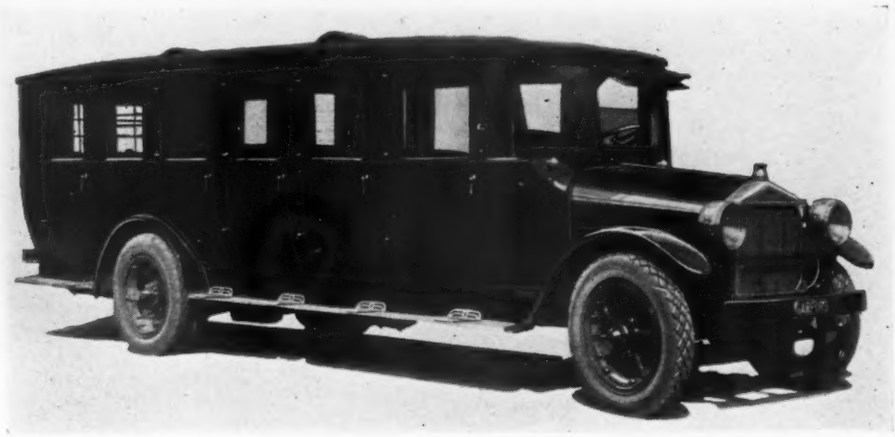
One of the 20-Passenger Graham Buses, Made by Graham Bros., Evansville, Ind., Operated by the Washington Railway and Electric Co., Washington, D. C. The Body was Built by the Hoover Body Co., York, Pa.

Hyatt Bearing Exhibit

The Hyatt Roller Bearing Co., Newark, N. J., will exhibit at A. E. R. A. a large operating model of the Hyatt roller bearing mounted in a housing showing the principles of construction and operation. There will also be smaller Hyatt bearings mounted in glass to show the principles of lubrication. In addition to the above a complete line of Hyatt bearings of the sizes and types used in motor buses and in electric railway service will be shown.

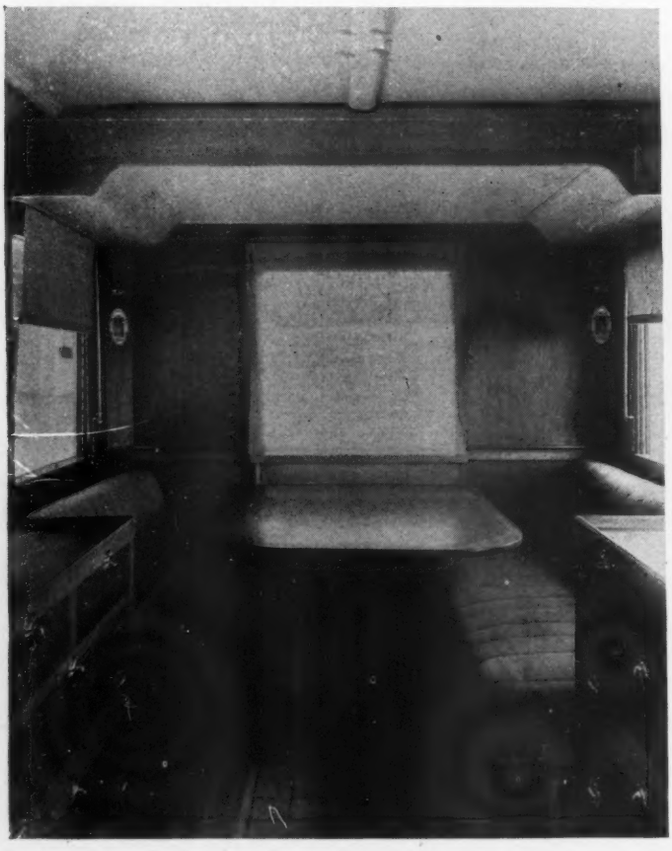
Petition Asks for Receivership

An amended petition asking for an injunction restraining the Power Truck and Tractor Co., from the further issuance of stock has been filed in St. Louis. The petition also asks for the appointment of a receiver.



Side and End Views of a Garford Built Coach

The Garford Motor Truck Co., will exhibit a number of body styles including this one at the Atlantic City Exhibit



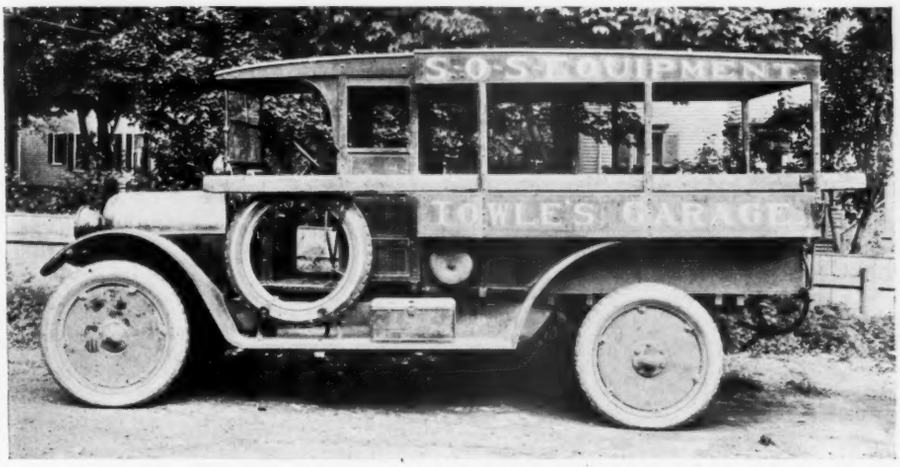
This Palatial Traveling Home on a Federal Chassis is the Property of Frank B. Willard, President of the Hartford Lunch Company, New York City

This home with its fittings and conveniences is said to be the finest and most sumptuously appointed of its kind in existence. It provides a traveling home for two or four persons and is fitted with a stove, sink, ice-box kitchen cabinet, clothes closet, ladies dresser, buffet, toilet, shower bath, electric lights, hot and cold running water and special heating system. The exterior views show the local compartments which are carried under the body and in which are placed various traveling utensils. Two separate water tanks, one for hot and one for cold water, are carried in the roof.

The Wrecking Truck Gets the Business

The Small Shop Can Build Up Its Service Work by Employing a Husky Wrecking Car. How a Portland Man Makes This Equipment Pay

By C. P. SHATTUCK



One of the Wrecking Trucks of Towle's Garage
It carries an unusual equipment and includes red lanterns and flags, electric lights, gin pole, etc. The trucks handled 2188 jobs last year at a good profit

THE tow-in and wrecking truck is generally regarded as essential, but not profitable. If the truck service station services a large number of trucks, and in territory where there are many accidents, the service truck is profitable. On the other hand if the dealer is servicing a limited number of trucks he is inclined to believe that it will not pay to include a wrecker in his shop equipment.

With the increasing number of motor vehicles on the road, accidents will not necessarily diminish, and they are not confined to passenger cars alone. The opportunity presents itself, therefore, for the truck service station to merchandise the tow-in and wrecking service at a profit. The small dealer can do this as successfully as the large one, and the independent truck service station can also.

To prove this contention, the example of an independent shop and garage, in Portland, Me., is quoted. Urban A. Towle is the proprietor and owner, and his "SOS EQUIPMENT" is known in many sections of New England. Conducting an independent shop, Mr. Towle must depend upon his service and merchandising abilities to keep his corps of mechanics busy. And he provides considerable work, large in extent and value, by means of his wrecking equipment.

He has two trucks completely equipped for all kinds of work and these operate on a 24 hour service. An extension phone to Mr. Towle's house from the garage as well as other telephone connection to the men, permits this 24 hour service. So well has difficult work been handled, that the shop gets all police, insurance, municipal and traction work. Also, Mr. Towle does the repairs on trucks where the trolley company is at fault.

Now as to the possibilities. In 1922 the Towle equipment brought in 556 jobs, wrecks and tow-ins or an average of 1¼ a day. This was in excess of 88 for 1921. This year the 1923 figures will be exceeded, as to date the number is well ahead of last year. The gross credit to the trucks is $2,188, but the meat in the cocoanut is, as Mr. Towle puts it: **I get the work of repairing the wreck or tow-in and sell the new parts and equipment needed.**

When the writer visited the shop there were five wrecks being repaired and they were not small jobs either.

Another angle is that every local tow-in gives Mr. Towle an opportunity to prove to the owner that he conducts a service station giving a square deal and honest value for the money. In short, the "SOS EQUIPMENT" builds up the repair business. In connection with service, Mr. Towle is a firm believer in shop equipment and has been since his start in 1912 when he opened a one-man shop. "You can't do business today without shop equipment," said Mr. Towle. Good equipment plus good men are responsible for his success.

Being a machinist, Mr. Towle constructed his wrecking and towing equipment. In addition to the conventional shovels, etc., a gin pole is carried for extracting wrecks from ditches, etc. Mr. Towle has constructed the four towing and supporting carriers illustrated herewith. These are constructed with solid axles and centers and are equipped with Goodrich solid tires. The wheels are mounted on Hyatt roller bearings. The

Right: A Portable Electric Lantern
The source of current supply is hot-shot batteries. Note switch at left and how lamp is attached to truck.

Below: Other Towing and Supporting Units
Note the pivoted carrier mounting. This construction permits turns to be readily negotiated.

Right: One of the Towing Carriers Made by Mr. Towle
Note the slots in uprights where strut rods are used on a rear axle. The pole is adjustable to length.

two poles are adjustable and are secured to a solid eyebolt at the rear of the truck.

As may be noted by studying the illustrations, the carriers provide for towing with either front or rear wheels gone or both. With them two cars can be towed with both front wheels gone. It is quite common to have to bring in two cars at the same time. Two of the units brought in a 12-ton municipal truck last winter. With the equipment it is possible to travel at a fairly high rate of speed, and one man can handle the work. Developing a high grade wrecking and tow-in service builds business for the service station, at least this is the experience of Urban A. Towle.

Operate Buses to Give Better Service

In This Instance the Buses Are Not Producing Any Profit, But They Are Rendering a Service at Less Loss Than With Trolleys

AMONG the New England electric street railways operating connecting lines between small cities and towns, and which have turned to the motor bus for relief from high operating and maintenance costs, is the Shore Line Electric Railways. This company operated electric cars between New London, Conn., and Westerly, R. I., on what is known as the shore line, serving intervening towns such as Groton, Noank, Mystic and Stonington. The road bed practically parallels what is termed the Atlantic Highway or what was known as the shore line road.

Like a number of electric lines it has suffered from passenger car competition. With excellent cement highways and no severe winters to obstruct traffic, owners of passenger cars, and they are numerous (Rhode Island has one car to every 9 and Connecticut one to every 9.1 persons) employ their automobiles where formerly they relied upon the common carriers. It is said that the Shore Line Railways was unable to earn enough revenue to keep its lines in 100 per cent conditon. The roadbed of the electric line was in poor shape and did not help any towards lowering the maintenance cost of the rolling stock and the company could not afford to reconstruct the bed. It cost about $45 to operate the line on an average of 100 miles daily and the average revenue was but $20, a loss of $25—but the public demanded service. The two-man car was replaced with a one-man car but the reduction in expense was slight, consequently in January of this year it was decided to give the motor bus a trial on one of the lines, that connecting Mystic with old Mystic, a distance of about four miles.

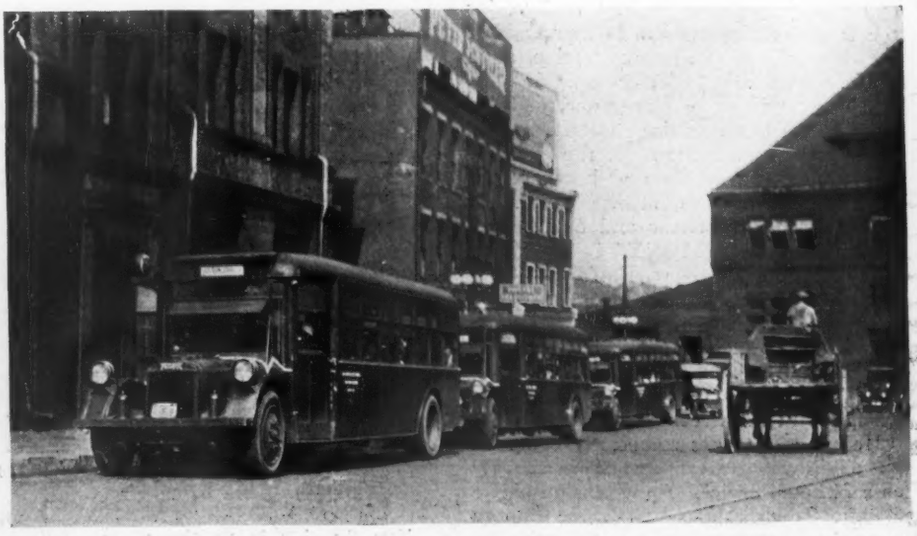
A White chassis model 50, with 25-passenger body was placed in service. It was operated on practically the same schedule or about 100 miles daily. While the exact figures are not disclosed, it reduced the operating loss of the service over $20 per day. Instead of stopping in the center of the town the bus ran to the outskirts, this affording the public better service than the trolley did. The use of the bus proved to the railway officials that it was cheaper than the trolley. Due to certain reasons and conditions the trolley service was later restored, and presumably at the same loss per day, but the bus is now employed as an emergency unit with a fleet of four others which are being operated on different lines.

On May 1 the bus company, which is known as the Groton & Stonington Traction Company, purchased two 30-passenger Fageols and on July 1 added two more of the same type. The electrics are serving from New London to Westerly, 21.90 miles as they formerly did. The buses operate between New London and Mystic or 12.64 miles. This is really a competitive service. Between Mystic and New London the territory is served by two Fageols which operate on an hourly basis. In New London the bus terminal is near the steam railroad company's depot. This terminal is also used by a number of other bus companies operating out of New London. The places served by the Fageols and starting from New London are: Groton, 2.5 miles; Poquonoc, 5.20 miles; Noank and Mystic, 12.64 miles. Connection is made with the trolley line for Stonington and Westerly.

The other two Fageols are used to operate between New London and Keeneys, and New London and Eastern Point, both six miles distant. Hourly trips are made. The Eastern Point line is a summer route, serving a large hotel and summer places in between. This line has been well patronized this summer.

While these buses have rolled up considerable mileage since being placed in service and have given excellent service no cost figures other than those which would be misleading have been compiled. Some cost figures were analyzed by the writer but these were not complete nor have the buses been in operation a sufficiently long enough time to produce accurate figures. The cost per mile on some lines appear to be high but this is due, perhaps, to the duplicate service over 12 miles. It is interesting to note that the company is receiving many letters from various street railway companies requesting information and cost figures but these are not available at the present time. A cost accounting system is being prepared and at a later date it may be practical to present accurate figures to the public.

The patrons of the lines are well pleased with the bus service as the schedule has been consistently maintained. The writer talked with a number of passengers on the various routes and all expressed themselves as well pleased. The tariffs are low when the quality of the service is considered. This matter of rates was brought up by the writer with the acting head of the company, and he admitted the rates were low, but said that while they could be increased without unfavorable action by the Public Utilities, experience had taught the company that the patronage fell off and that the trolley was favored and automobiles were used. This executive believes that much educational propaganda is still necessary to make the public appreciate the value of bus service.



Three of the Fageols Operating on the "Shore Line" Arriving in New London

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line

Fan Belt Type: V—V-Shape, F—Flat, R—Round

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Ace, Series A–1½	3	⅜	1	1	V	7	1¾	8	1¼	40⅝	2	F	12	3¼	¼	4	12	3¼	¼	4	122½	76⅜	215¼	32	9
Ace, Series A–2	3	⅜	1¼	1¼	V	6½	2	11	1¼	42⅝	2	F	13½	3½	¼	4	13½	3½	¼	4	Opt	85	241	32	9½
Ace 60–3	3	⅜	1¼	1¼	V	10	2	15	1¼	42⅝	2	F	13½	3½	¼	4	13½	3½	¼	4	Opt	84½	241	....	9½
Acme 20–1	3	⅜	1	1	H	11	2	11	2	38¾	¾	V	11½	2½	¼	2	11½	2½	¼	2	110⅜	63⅜	194	34	11
Acme 30–1½	3	⅜	1	1	V	11	2	11	2	38¾	¾	V	12	3	¼	2	12	3	¼	2	110⅜	63⅜	194	34	10½
Acme 40–2	4	⅜	1	1	V	8	1½	11	1½	40	1½	F	12	3¼	¼	2	12	3¼	¼	2	123⅜	74⅜	208	34	9½
Acme 40L–2	4	¼	1⅛	1¼	V	11½	1½	12½	1½	39½	1½	F	12	3¼	¼	2	12	3¼	¼	2	123⅜	74⅜	214½	34	9¾
Acme 60–2½	4	¼	1⅛	1¼	V	11½	1½	12½	1½	39½	1½	F	13	3½	¼	2	13	3½	¼	2	132⅜	79⅜	223½	34	10
Acme 60L–3	4	¼	1⅛	1⅛	V	11½	1½	12½	1½	41⅜	1½	F	13	3½	¼	2	13	3½	¼	2	140‡‡	79⅜	235½	34	10
Acme K (Bus)	4	¼	1⅛	1⅛	V	11½	1½	12½	1½	41⅜	1½	F	15½	3¾	¼	2	15½	3¾	¼	2	220⅛	127⅝	312	41⅜	6
Acme 90–3½	4	¼	1¼	1¼	V	10	1½	12	1½	41¾	1½	F	15⅝	3¾	¼	2	15½	3¾	¼	2	150¼	95¼	243	36	10¾
Acme 90L–4	4	¼	1½	1½	V	10	1½	10	1½	40½	1¾	F	15½	3¾	¼	2	15½	3¾	¼	2	153¾	96¾	255	37	10¾
Acme 125–5	4	¼	1½	1½	V	10	1½	10	1½	40½	1¾	F	18	4	¼	2	18	4	¼	2	159¾	99¾	261	37	10
American La France 1R–¾	3	¼	1⅛	1⅝	V	9	1½	9	1½	45	1½	F	29	4	¼	1	46½	2¾	¼	4	108	60	207 ⅛	33	10
American La France 2R–2	3	¼	1⅛	1⅝	V	11½	1½	9	1½	42	2	F	†	†	¼	4	17	3½	¼	4	132	98	252	33	10
American La France 2R–2	3	¼	1⅛	1⅝	V	11½	1½	9	1½	42	2	F	†	†	¼	4	17	3½	¼	4	156	81	231 ⅛	33	10
American La France 3R–3½	3	¼	1⅛	1⅝	V	11½	1½	9	1½	42	2	F	11¾	8	¼	2	21	4	¼	4	144	90	243⅛	35‡‡	9
American La France 3R–3½	3	¼	1⅛	1⅝	V	11½	1½	9	1½	42	2	F	11¾	8	¼	2	21	4	¼	4	168	104	267⅞	35‡‡	9
American La France 3R–3½	3	¼	1⅛	1⅝	V	11½	1½	9	1½	42	2	F	11¾	8	¼	2	21	4	¼	4	192	114	291⅞	35‡‡	9
American La France 5R–5	3	¼	1‡‡	1⅝	V	11½	1½	9	1½	42	2	F	11¾	8	¼	2	21	4	¼	4	144	90	243⅛	36	10
American La France 5R–5	3	¼	1‡‡	1‡‡	V	11½	1½	9	1½	42	2	F	11¾	8	¼	2	21	4	¼	4	168	104	267⅞	36	10
American La France 5R–5	3	¼	1‡‡	1‡‡	V	11½	1½	9	1½	42	2	F	11¾	8	¼	2	21	4	¼	4	192	114	291⅞	36	10
Armleder 21–1½	4	¼	1	⅜	V	12	1¾	16½	1¼	31½	2	F	12	3¼	¼	4	12	3¼	¼	4	Opt	67¾	218	32	9¾
Armleder 40B–1½	4	¼	1¼	⅜	V	9½	2	11½	1¼	33¼	2	F	12	3½	¼	4	12	3½	¼	4	Opt	74 ⅜	217¾	32	9¾
Armleder 40C–1½	3	⅜	1¼	⅜	V	8½	1¼	11½	1¼	34	1¼	F	12	3½	¼	4	12	3½	¼	4	Opt	74 ⅜	217¾	32	9¾
Armleder KWB–3½	4	¼	1¼	⅜	V	12	2	16½	1¼	35¾	2	F	37	3	⅜	1	16	3¾	¼	8	Opt	89‡‡	261½	36	8‡‡
Armleder KWC–3½	3	⅜	1¼	⅜	V	10	1½	16½	1¼	35¾	2	F	37	3	⅜	1	16	3¾	¼	8	Opt	89‡‡	261½	36	8‡‡
Armleder HWB–2½	4	¼	1¼	⅜	V	9½	2	11½	1¼	33¼	2	F	13¼	3½	¼	4	13¼	3½	¼	4	Opt	74 ⅜	217¾	32	10
Armleder HWC–2½	3	⅜	1¼	⅜	V	8½	1¼	11½	1¼	34	1¼	F	13¼	3½	¼	4	13¼	3½	¼	4	Opt	74 ⅜	217¾	32	10
Atco B1½	4	¼	1	1	V	11	2	11	1¼	31½	2	F	25½	2½	⅜	4	18	2½	⅜	4	109¾	.....	.....	32	.....
Atco B1–1½	4	¼	1	1	V	11	2	11	1¼	31½	2	F	46	2½	⅜	2	46	2¼	⅜	2	109¾	.....	.....	32	.....
Atco A–2½	4	¼	1¼	1¼	V	12	2	11	1¼	33¼	1¾	F	25½	2½	⅜	4	18	2½	⅜	4	124¼	.....	.....	33	.....
Atlas 22–1	4	⅛	1	¼	V	12	...	11	1½	33½	1½	F	42⅞	2¼	⅛	2	22½	2¼	⅛	1	84¾	.....	177¾	33¾	.....
Atlas 25	4	⅛	...	...	...	12	1¾	...	1½	...	...	...	42⅞	2¼	...	...	...	...	...	...	...	...	177¾	...	...
Atlas 40–2	4	⅛	1	¼	V	12	1¾	11	1½	33½	1½	F	22	3	¼	1	42⅞	2¼	⅛	2	130½	75½	218	34	11
Atterbury 20R–1½	4	¼	1	⅜	....	8	1½	14	1½	38‡‡	1¼	F	11 ⅜	3¼	¼	4	11 ⅜	3¼	¼	4	122½	72⅞	211¾	34	9½
Atterbury 22C–2½	4	¼	1¼	⅜	....	10½	1½	16	1½	40½	1½	F	13 ⅜	3½	¼	4	13 ⅜	3½	¼	4	129¼	78¾	225	34	9½
Atterbury 22D–3½	4	¼	1¼	⅜	....	10½	1½	16	1½	40½	1½	F	15⅛	3¾	¼	4	15⅛	3¾	¼	4	142¾	93¼	242	37½	8 ⅜
Atterbury 8E–5	3	¼	1½	⅜	....	14	2	20½	2	40	2	F	17¾	4	¼	4	17¾	4	¼	4	157⅛	80⅛	263	37½	10
Autocar XXI–F–1½	4	⅛	1⅛	....	....	3-4	1⅛	9½	1⅛	....	....	..	16¼	2½	⅛	4	13½	2½	⅛	4	91	67	156	34	9½
Autocar XXI–G–1½	4	⅛	1⅛	....	....	3-4	1⅛	9½	1⅛	....	....	..	16¼	2½	⅛	4	13½	2½	⅛	4	114	90	179	34	9½
Autocar XXVI–5	3	¼	1⅛	....	....	3½	1½	3½	1½	49¼	2	F	20¼	2¾	¼	4	20¼	2¾	¼	4	140	80¾	223	34½	10
Autocar XXVI–5	3	¼	1⅛	....	....	3½	1½	3½	1½	49¼	2	F	20¼	2¾	¼	4	20¼	2¾	¼	4	176	116¾	259	34½	10
Autocar XXVII–2	3	¼	1⅛	....	....	3½	1½	3½	1½	47¼	2	F	22⅝	2	¼	4	22⅝	2	¼	4	131½	76	213	34½	10¼
Autocar XXVII–2	3	¼	1⅛	....	....	3½	1½	3½	1½	47¼	2	F	22⅝	2	¼	4	22⅝	2	¼	4	155½	100	237	34½	10⅜
Available H–1½	4	⅜	2¼	1 ⅜	....	11	1⅝	14	1⅝	40	2	..	48	2½	¼	2	36	2½	¼	2	120	80½	201¼	32	9
Available H2	4	⅜	2¼	1⅛	V	12	1⅝	14	1⅝	40	2	F	48	2½	¼	2	36	2½	¼	2	120	84½	212	32	9
Available H–2½	3	⅜	2¼	1⅛	....	11	1⅝	14	1⅝	40	2	..	13½	3½	¼	4	13½	3½	¼	4	144	85⅝	226¼	32	9
Available H3½	4	⅜	2½	1⅛	V	12	1⅝	14	1⅝	42	2	F	16	3¾	¼	4	16	3¾	¼	4	168	106⅜	254⅜	36	9
Available H5	3	¼	2½	1‡‡	....	12	2	16	2	40	2	..	18	4	¼	4	18	4	¼	4	168	112‡‡	263½	38	9
Avery 1	3	⅜	....	1	....	10	2	6½	2	31¾	1½	F	19½	2	⅜	4	18½	2	⅜	4	85	49	169½	34	13
Bell M–1	4	⅜	1	⅜	V	10	2	10	1½	32	2	F	36	2½	⅜	1	42	3	¼	1	110	68	212	34	10
Bell E–1½	4	⅜	1	⅜	V	10	2	10	1½	32	2	F	39	2½	⅜	1	48	3	¼	1	114	79	218	34	10
Bell O–2½	4	⅛	1¼	⅜	V	10	2	10	1½	32	2	F	48	2½	⅜	1	54	3	¼	1	126	94	228	34	10
Belmont B–1	3	¼	1	1	V	10	2¼	12	2¼	33½	⅜	F	36½	1½	⅜	1	34½	1½	⅜	1	85	50	165	34	11½
Belmont D–2	3	¼	1¼	1¼	V	10½	2¼	9	1¾	34	2	F	*51	3¼	¼	1	47	2¼	¼	1	119⅝	87⅛	212⅜	34	11
Belmont F–3	3	¼	1¼	1¼	V	10¾	2¼	14	1¾	34	2	F	51	3¼	¼	1	47	2¼	¼	1	137½	88½	233½	34	11
Bessemer G–1	3	⅜	1	⅜	V	11½	2¼	10	2¼	42	⅝	V	46	2½	¼	2	44	2¼	¼	2	98¼	58½	182¾	34	.....
Bessemer H–2–1½	3	⅜	1	⅜	V	11½	2¼	10	2¼	43	⅝	V	16⅜	2	¼	8	16⅜	2	¼	8	116	76	203	34	.....
Bessemer J2–2½	3	⅜	1¼	⅜	V	12	1½	5	1⅞	36¼	1¼	F	18⅜	2¼	¼	8	18⅜	2¼	¼	8	142⅜	92¼	229	34	.....
Bessemer K2–4	3	⅛	1¼	⅛	V	11½	2¼	10	2¼	39⅜	1½	F	55	3½	¼	2	33	4½	¼	1	157½	108	249	38	.....
Bethlehem KN–1	3	⅛	....	1	V	8¼	2⅛	8	2⅛	35½	1¼	F	49½	2¼	⅛	1	20	2¼	⅛	2	89¼	56¼	175	32 ⅛	10½
Bethlehem GN–2	3	⅛	....	1¼	V	8½	2⅛	9½	2⅛	40⅛	1½	F	52	2½	⅛	1	37	2½	⅛	1	116¾	74	208¼	34½	9¼
Bethlehem HN–3	3	⅛	....	1¼	V	8½	2⅛	9½	2⅛	40⅞	1½	F	61	2½	⅛	1	47	2½	⅛	1	134¾	81½	226¼	34½	8½
Betz J3–1	3	⅛	1	1¼	V	12	1½	17	1¼	33½	1½	F	11	3	¼	4	11	3	¼	4	126	90	215	34	10
Betz D3–2½	3	¼	1¼	⅛	V	12	2⅛	12	1½	33½	1¼	F	12	3½	¼	4	12	3½	¼	4	Opt.	.....	.....	34	.....
Brinton C–1½	3	⅜	1⅛	⅜	....	11	1¼	13	1¼	33	⅜	F	39	2½	⅜	1	38	2½	⅜	1	118	.....	.....	.....	33
Brinton D–2½	3	⅜	1⅛	⅜	....	11	1¼	13	1¼	33	⅜	F	13	3½	¼	2	13	3½	¼	2	135½	.....	.....	.....	33
Brockway S2–1½	3	⅜	1	....	V	10½	2¼	5½	2¼	39	1¼	F	20	2	⅜	4	20	2	⅜	4	118	72	118½	32	.....
Brockway K4–2½	3	⅜	1¼	....	V	6½	1¾	13	1¼	34	1¼	F	13	3½	¼	4	13	3½	¼	4	142	89½	123½	34	.....
Brockway R–2–3½	3	⅜	1¼	....	V	9½	1¾	14	1¼	34	1½	F	15⅛	3¾	¼	4	15⅛	3¾	¼	4	176	102¾	175	36	.....
Brockway T–5	3	¼	1½	....	V	13	2	22	2	40⅜	2	F	17¾	4	¼	4	17¾	4	¼	4	176	104½	176	36	.....
Buffalo Tractor-Truck	4	⅛	1¼	⅛	V	7	1⅝	13	1⅝	41½	2	F	21	2¼	¼	4	21	2¼	¼	4	124	82½	224	34	9¾
Casco A–1	4	⅜	1⅛	⅛	V	12	1¾	14½	1¾	34¾	1½	F	48½	2½	⅛	1	48	2¼	⅛	1	104	61	192¼	34	10
Case	3	¼	1⅛	1‡‡	V	7	1½	6	1½	47⅛	2	...	25½	2½	⅛	4	24¼	2¼	⅛	4	106	59¼	210	31	13½
Chicago C–1½	4	....	1	1½	....	11	1½	15	1½	40	2	...	10	2½	¼	4	10	2	¼	4	145½	75 ⅛	211½	32	.....
Chicago C–2½	4	....	1¼	1¾	....	11	1½	15	1½	40	2	...	10	2½	¼	4	10	2	¼	4	157½	87 ⅛	223½	32	.....
Chicago C–3½	4	....	1¼	1¾	....	11	1½	15	1½	46	2	...	12	3¼	¼	4	12	2¼	¼	4	170	84½	249	36¾	.....
Chicago D–5	4	....	1¾	1¾	....	11	1½	15	1½	46	2	...	12	3¼	¼	4	12	2¼	¼	4	170	84½	249	36¾	.....

* Disk Brake 10¼ O. D. 6½ I. D. † 12 O. D. 7½ I. D. ‡ 12 O. D. 7½ I. D.

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Climber A-20	3	1/4	1	1 1/4	H	17 1/2	1 1/2	17 1/2	1 1/2	32	1	F	16	2 1/4	1/4	2	16	2 1/2	1/4	1	120	96	216	34	14
Clinton 1 1/4	4	1/4	1	1/2	H	7 1/2	1 1/4	13	1 1/4	36 3/8	2	F	11 3/4	2 1/2	1/4	4	11 3/4	2 1/2	1/4	4	112	73 3/4	207	34	10
Clinton 2	4	1/4	1	1/2	H	11	1 3/4	12	1 1/4	36 3/8	2	F	11 3/4	3 1/4	1/4	4	11 3/4	3 1/4	1/4	4	131	81	233	33 1/4	9
Clinton 3	4	1/4	1 1/4	1/2	H	11	2	19	1 1/4	38 3/8	2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	166	98	270 1/2	33 1/4	9 1/2
Clinton 4	4	1/4	1 1/4	1/2	H	11	2	19	1 1/4	38 3/8	2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	163	105	270 1/2	38	8 1/2
Clinton 5	4	1/4	1 1/2	1/2	H	12	2	18	1 1/2	41	2	F	18	4	1/4	4	18	4	1/4	4	206 1/2	115	318	38	8
Clinton 5-7	4	1/4	1 1/2	1/2	H	12	2	18	1 1/2	41	2	F	18	4	1/4	4	18	4	1/4	4	130 1/2	91	242	38	10
Clydesdale 120B-5-6	3	1/4	1 11/16	1/2	V	9	2	18 1/2	2	46 1/2	2	F	18	4	1/4	4	18	4	1/4	4	131	.....	.....	38	.....
Clydesdale 90-3 1/2-4 1/2	3	1/4	1 5/8	1/2	V	9	1 1/2	14	1 1/2	42	1 1/2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	143	.....	.....	38	.....
Clydesdale 65EX 2 1/2-3	3	1/4	1 5/8	1/2	V	9	1 1/2	14	1 1/2	42	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	132	.....	.....	33 1/4	.....
Clydesdale 65X-2 1/2-3	3	1/4	1 11/16	1/2	V	11	1 1/2	11	1 1/2	11	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	137	.....	.....	33 1/4	.....
Clydesdale 42-1 1/2-2	3	1/4	1 11/16	1/2	V	15	2	12	2	41	3/4	V	12	3 1/4	1/4	4	12	3 1/4	1/4	4	117	.....	.....	34	.....
Clydesdale 20-1-1 1/2	3	1/4	1 11/16	1/2	V	15	2	12	2	41	3/4	V	11 1/4	3	1/4	4	11 1/4	3	1/4	4	95	.....	.....	34	.....
Clydesdale 18-3/4-1 1/4	3	1/4	1 11/16	1/2	V	15	2	12	2	41	3/4	V	11 1/4	2 1/2	1/4	4	11 1/4	2 1/2	1/4	4	95	.....	.....	34	.....
Clydesdale 10-3/4-1 1/4	3	1/4	1 11/16	1/2	V	9	2	9	2	41	3/4	V	11 1/4	2 1/2	1/4	4	11 1/4	2 1/2	1/4	4	109	.....	.....	34	.....
Clydesdale 10A-1-3/4-1 1/4	3	1/4	1 11/16	1/2	V	9	2	9	2	41	3/4	V	11 1/4	2 1/2	1/4	4	11 1/4	2 1/2	1/4	4	109	.....	.....	34	.....
Commerce 9-1500	3	1/4	1	1/2	V	10	2	10	2	44	3/4	V	50	2	1/4	2	48 1/2	2	1/4	2	92 5/8	53 3/8	193	34	9
Commerce 14B-3000	4	1/4	1	1/2	V	10	2	9 1/2	1 1/2	39 3/4	1/4	F	11 1/16	3 1/4	1/4	4	11 1/16	3 1/4	1/4	4	117	75	210	34	8 1/4
Commerce 25B-5000	4	1/4	1 1/4	1/2	V	9 1/2	1 1/2	15 1/2	1 1/2	42	1 1/2	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	132	84	228 1/2	34	12 1/2
Concord A-2	4	1/4	1 1/4	1/2	H	11	2 3/8	9 1/2	1 1/2	34	2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	108 1/4	.....	.....	32 1/4	.....
Concord AX-2	4	1/4	1 1/4	1/2	H	11	2 3/8	9 1/2	1 1/2	34	2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	122 3/4	.....	.....	32 1/4	.....
Concord B-3	4	1/4	1 1/4	1/2	H	11	2 3/8	9 1/2	1 1/2	34	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	122 1/2	.....	.....	32 1/4	.....
Concord BX-3	4	1/4	1 1/4	1/2	H	11	2 3/8	9 1/2	1 1/2	34	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	155 5/8	.....	.....	32 1/4	.....
Corbitt S-3/4	3	1/4	1	1/2	....	8	2	14	2	38	5/8	V	19	2	1/4	2	19	2	1/4	2	105	.....	.....	34	.....
Corbitt D-1 1/2	3	1/4	1 1/4	1/2	....	8	2	14	2	38	5/8	V	45 1/4	2	1/4	1	45 1/4	2	1/4	1	120	.....	.....	34	.....
Corbitt C-2	3	1/4	1 1/4	1/2	....	14	1 1/4	13	1 1/4	36	1 1/4	F	51 1/2	2 1/4	1/4	1	51 1/2	2 1/4	1/4	1	138	.....	.....	35	.....
Corbitt B-4 1/2	3	1/4	1 1/4	1/2	....	14	1 1/4	13	1 1/4	36	1 1/4	F	51 1/2	2 1/4	1/4	1	51 1/2	2 1/4	1/4	1	138	.....	.....	35	.....
Corbitt AA-5	3	1/4	1 1/2	1/2	....	13	1 1/4	8	1 1/4	36	2	V	69 1/4	3	1/4	1	69 1/4	3	1/4	1	160	.....	.....	38	.....
Corbitt A-4	3	1/4	1 1/4	1/2	....	13	2	14	2	36	1 1/4	V	64	2 1/2	1/4	1	64	2 1/2	1/4	1	160	.....	.....	35	.....
Day-Elder AN-1 1/2	3	1/4	1	1 1/4	V	6 3/4	1 3/4	7	1 1/4	.....	1 1/2	F	10 1/16	3	1/4	4	10 1/16	3	1/4	4	106 3/4	62 3/4	191	35	.....
Day-Elder BN-2	3	1/4	1	1 1/4	V	4	1 1/2	12 1/2	1 1/2	.....	1 1/4	F	11 3/4	3 1/4	1/4	4	11 3/4	3 1/4	1/4	4	118 1/2	78 3/4	202 3/4	35	.....
Day-Elder DN-2 1/2	3	1/4	1 1/4	1/2	V	4	1 1/2	12 1/2	1 1/2	.....	1 1/2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	122 1/2	72 3/4	212 3/4	35	.....
Day-Elder CN-3	3	1/4	1 1/4	1/2	V	10 1/2	2	12	1 1/2	.....	1 1/2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	123 1/4	77 1/4	216	35	.....
Day-Elder FN-4	3	1/4	1 1/2	1 3/4	V	7 1/2	1 1/2	12 1/2	1 1/2	.....	1 1/2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	120 1/4	81 3/4	214 1/2	35	.....
Day-Elder EN-5-6	4	1/4	1 1/2	1 3/4	V	12 1/2	2	....	1 1/4	.....	2	F	17 11/16	4	1/4	4	17 11/16	4	1/4	4	120 3/4	85 3/4	220	37	.....
Defiance B-1 1/2	3	1/4	1	1	V	10	2	8	2	40 3/4	1 1/4	F	45	2 1/2	1/4	1	43 1/4	2 1/4	1/4	1	116	.....	.....	34	.....
Defiance 48-2	3	1/4	1	1	V	10	2	8	2	40 3/4	1 1/4	F	54 1/4	2 1/2	1/4	1	52 1/2	2 1/4	1/4	1	116	.....	.....	34	.....
Defiance D	3	1/4	1	1	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	45	2 1/2	1/4	1	43 1/4	2 1/4	1/4	1	120	.....	.....	34	.....
Defiance E	3	1/4	1	1	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	54 1/4	2 1/2	1/4	1	52 1/2	2 1/4	1/4	1	120	.....	.....	34	.....
Defiance EL	3	1/4	1	1	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	54 1/4	2 1/2	1/4	1	52 1/2	2 1/4	1/4	1	140	.....	.....	34	.....
Denby 31-1 1/4	3	1/4	1	1	....	9	2	12	2	41 11/16	3/4	V	8 1/2	4	1/4	2	52	2 1/2	1/4	2	97 5/8	.....	.....	34	.....
Denby 33-2	3	1/4	1	1	....	9	2	12	2	41 11/16	3/4	V	8 1/2	4	1/4	2	46 1/2	1 1/2	1/4	2	120	.....	.....	33 1/4	.....
Denby 35-3	3	1/4	1 1/4	1 1/4	....	8	1 5/8	14 1/4	1 1/4	34 1/4	1 1/4	F	8 1/2	4	1/4	2	51	3	1/4	2	143 3/4	.....	.....	33 1/4	.....
Denby 27-4	3	1/4	1 1/4	1 1/4	....	13	1 3/4	16 1/4	1 1/4	38 1/2	1 1/2	F	8 1/2	4	1/4	2	58	2 1/2	1/4	2	140	.....	.....	34	.....
Denby 210-5	3	1/4	1 1/4	1 1/4	....	13	1 3/4	16 1/4	1 1/4	38 1/2	1 1/2	F	8 1/2	4	1/4	2	89	2 1/4	1/4	2	140	.....	.....	34	.....
Dependable Dispatch A-1 1/4	4	1/4	1	1/2	V	14	2 1/4	15	1 1/4	37 1/2	2	F	53 1/4	2 1/4	1/4	1	38 1/4	2 1/4	1/4	1	108	.....	.....	33 1/2	.....
Dependable C-2	4	1/4	1	1/2	V	14	2 1/4	15	1 1/4	37 1/2	2	F	53 1/2	2 1/2	1/4	1	38 1/2	2 1/2	1/4	1	121	77	215	33	9 1/2
Dependable D-2 1/2	4	1/4	1 1/4	1/2	V	10	2 1/4	11 1/2	1 1/4	37 1/2	2	F	53 1/2	2 1/2	1/4	1	38 1/2	2 1/2	1/4	1	140	77	215	33	9 1/2
Dependable E-3	4	1/4	1 1/4	1/2	V	10	2 1/4	11 1/2	1 1/4	37 1/2	2	F	63	2 1/2	1/4	1	49	2 1/2	1/4	1	152	92	248	33	9 1/2
Dependable G-3 1/2	4	1/4	1 1/4	1/2	V	13	2	13	1 1/4	37 1/2	2	F	63	2 1/2	1/4	1	49	2 1/2	1/4	1	170	.....	.....	33	.....
Diamond T-O3-1	3	1/4	1	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	48	2 1/2	1/4	2	33	2 1/2	1/4	2	100	.....	.....	34	.....
Diamond T-T-1 1/2	3	1/4	1	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	11 1/2	3 1/4	1/4	4	11 1/2	3 1/2	1/4	4	Opt	.....	.....	34	.....
Diamond T-U2-2 1/2	3	1/4	1 1/4	1 1/4	V	9	1 1/4	8	1 1/4	35	2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	Opt	.....	.....	34	.....
Diamond TK-3 1/2	3	1/4	1 1/4	1 1/2	V	10	1 1/2	10	1 1/2	35	2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	Opt	.....	.....	37	.....
Diamond T-EL-5	3	1/4	1 1/4	1 1/2	V	10	1 1/2	10	1 1/2	35	2	F	18	4	1/4	4	17 11/16	4	1/4	4	Opt	.....	.....	37	.....
Diamond T-S-5	3	1/4	1 1/2	1 3/4	V	9	2	21	2	40 3/8	2	F	18	4	1/4	4	17 11/16	4	1/4	4	Opt	.....	.....	37	.....
Diehl A	3	....	1	1	....	....	....	....	....	....	....	....	28	2 1/2	1/4	2	27	2	1/4	2	90	48	174	....	11
Dixon Model D	4	1/4	1	....	V	11	1 1/2	8	1 1/2	41	....	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	126	71	221 1/2	34 1/2	9 1/2
Dixon Model C	4	1/4	1 1/4	....	V	11	1 1/2	9	1 1/2	42	....	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	Opt	71	221 1/2	34 1/2	9 1/2
Dixon Model A	4	1/4	1 1/4	....	V	12	1 1/2	10	1 1/2	42	....	....	.....	.....	1/4	4	13	....	1/4	4	Opt	71	221 1/2	36	9 1/2
Dodge Brothers-3/4	4	1/8	1 1/8	1/4	V	9	1 1/2	7 1/4	1 1/16	34 1/2	1	F	19 1/4	2 1/4	1/4	4	14 3/8	1 3/4	1/4	4	63 11/16	37 1/16	159 11/16	45	9 3/8
D-Olt	3	1/4	1	1/8	H	18	2	18	2	36	1	F	54	3	1/4	2	42	3	1/4	2	240	68	166	34	11
Dorris K-4-2	3	1/4	1 1/4	1 1/4	V	2 1/4	1 1/2	6 1/4	1 1/4	42 7/8	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	142 3/4	96 1/2	233 1/2	34	9
Dorris K7-3 1/2	3	1/4	1 1/4	1 1/4	V	2 1/4	1 1/2	6 1/4	1 1/4	42 7/8	2	F	15 3/4	3 3/4	1/4	4	15 3/4	3 3/4	1/4	4	178 1/2	130 1/2	270 1/2	36	9
Dort 103 Series	3	1/8	1	1/4	H	6	2 1/4	15 1/8	2 1/4	32	1	F	35 1/2	1 3/4	1/4	2	36	1 3/4	1/4	2	50 3/4	.....	141 5/8	35 3/4	8 3/4
Double Drive B	4	1/4	1 1/2	1 11/16	V	12	2	19	1 1/2	34	2	F	8 5/8	4	1/4	2	18	4	1/4	2	120	84	216	36	9 3/4
Double Drive D	4	1/4	1 1/2	1 11/16	V	12	2	19	1 1/2	34	2	F	8 5/8	4	1/4	2	18	4	1/4	2	120	84	216	36	9 3/4
Duplex E-3 1/2	3	1/4	1 1/4	1	....	....	....	....	....	....	....	....	9 1/2	2 1/2	1/4	2	5 1/2	2 1/2	1/4	2	126	.....	.....	39 3/8	.....
Duplex A	....	....	1 1/4	1 1/2	....	....	....	....	....	....	....	....	.....	2	....	4	.....	2	....	4	121	.....	.....	34	.....
Eagle 100-2	4	1/4	1 1/4	1	V	14	2	16	1 1/4	33 3/8	1 1/2	..	49 1/2	3	1/4	1	46	2	1/4	1	Opt	.....	.....	36	.....
Eugol 752-1	3	1/4	1 3/4	1/8	V	8	1 3/4	15 1/2	1 1/4	32 3/4	1 1/2	F	11	2 1/2	1/4	2	11	2 1/2	1/4	2	102	.....	.....	30	.....
Fageol 1 1/2-2	3	1/4	1 1/8	1 1/2	V	10	2 1/2	20	2 1/2	37 3/4	1 1/2	F	19 1/4	1 3/4	1/4	2	19 1/4	1 3/4	1/4	2	120	.....	.....	30	.....
Fageol 2 1/2-3	3	1/4	1 1/8	1 11/16	V	10	1 1/4	14 3/4	1 1/4	34 3/4	1 1/2	F	13 1/4	3 1/2	1/4	2	13 1/4	3 1/4	1/4	2	141	.....	.....	34	.....
Fageol 3 1/2-4	3	1/4	1 5/8	2	V	9	1 1/2	17 1/2	1 1/2	40 1/2	1 1/2	F	15 1/2	3 3/4	1/4	2	15 1/2	3 3/4	1/4	2	159 1/2	.....	.....	37 3/4	.....
Fageol 5-6	3	1/4	1 5/8	2	V	9	1 1/2	17 1/2	1 1/2	40 1/2	1 1/2	F	18	4	1/4	2	18	4	1/4	2	161 1/4	.....	.....	37 3/4	.....
Federal R-2-1	4	1/4	1	....	V	.....	1 1/2	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	110	.....	.....	.....	.....
Federal S-21-1 1/2	4	1/4	1	....	V	.....	1 1/2	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	118	.....	.....	.....	.....
Federal S-22-1 1/2	4	1/4	1	....	V	.....	1 1/2	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	118	.....	.....	.....	.....
Federal U-2-2 1/2	4	1/4	1 1/4	....	V	.....	1 1/2	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	134	.....	.....	.....	.....
Federal WL-4	4	1/4	1 1/4	....	V	.....	1 1/2	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	154	.....	.....	.....	.....
Federal X2-5	4	1/4	1 1/2	....	V	.....	1 3/4	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	154	.....	.....	.....	.....
Federal Light Duty	4	1/4	1 1/4	....	V	.....	1 1/4	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	86	.....	.....	.....	.....
Federal Heavy Duty	4	1/4	1 1/4	....	V	.....	1 1/4	.....	1 1/2	.....	....	F	.....	.....	1/4	4	.....	.....	1/4	4	99	.....	.....	.....	.....
Ford T-1	3	1/4	1.06	1 1/16	H	4	2	....	1 3/4	26 1/16	1 1/8	F	23 3/8	1 1/8	1/4	1	12	1 1/8	1/4	2	60	.....	123	23	9 1/4
Front Drive C-1 1/2	4	1/4	1	1 1/2	V	13 3/4	1 3/4	17	1 3/8	33	2	F	13	4	1/4	2	15	4	1/4	2	132	96	216	36	10 1/2
Fulton F1-1 1/2	4	1/4	1 1/8	1 1/8	H	11	2	11	2	36 1/2	1 1/2	F	43	2 1/2	1/4	1	40 1/4	1 3/4	1/4	1	103 1/2	58	198	32 7/8	9 1/2
Fulton FX-1 1/2	4	1/4	1 1/8	1 1/2	H	13	2	15	2	33 1/2	1 1/2	F	43	2 1/2	1/4	1	40 1/4	1 3/4	1/4	1	103 1/2	58	198	32 7/8	9 1/4
Fulton C-2	4	1/4	1 1/8	1 1/2	H	13	2	15	2	37 1/2	1 1/2	F	50 1/2	3	1/4	1	25	2 3/4	1/4	1	120	73	215 1/2	34	10
Fulton A-1	4	1/4	1 1/8	1 1/2	H	13	2	15	2	37 1/2	1 1/2	F	48	2 1/2	1/4	1	47 1/2	2 1/4	1/4	1	106	60	192	33 3/4	12
Fulton C-2	4	1/4	1 1/8	1 1/2	V	9 3/4	2	10	1 1/4	35 1/2	1 1/2	F	50 1/2	3	1/4	1	25	2 3/4	1/4	1	120	73	215 1/2	34	10
F. W. D. B-3	3	1/4	1 11/16	1 1/2	V	4	2	5	1 1/2	40	1 1/8	F	27	3 1/2	1/4	1	43	2 3/4	1/4	2	148	97	200	36	9 3/4
Garford 15-1	4	1/4	1	....	V	.....	.....	.....	.....	34	1 1/2	F	11	2 1/2	1/4	4	11	2 1/2	1/4	4	96	61	187	34	11
Garford 25B-1 1/2	3	1/4	1 1/4	....	H	.....	.....	.....	.....	37 1/16	1	F	11 3/4	3 1/4	1/4	4	11 3/4	3 1/4	1/4	4	108	70	200	34	9 1/2
Garford 70H-2 1/2	4	1/4	1 1/4	....	V	.....	.....	.....	.....	34 1/16	2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	121	74	214	34	9 1/2
Garford 77D-4	4	1/4	1 1/4	....	V	.....	.....	.....	.....	39	2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	144	88 1/2	246	36	9 1/2
Garford 68D-5	4	1/4	1 1/2	....	V	.....	.....	.....	.....	41 1/16	2	F	17 3/4	4	1/4	4	17 3/4	4	1/4	4	150	88 1/2	251	36	10
Garford 150-A-7 1/2	4	1/4	1 1/2	....	V	.....	.....	.....	.....	41 1/16	2	F	10 1/2	4	3/8	2	21 5/8	4	1/4	4	150	88 1/2	251	36	11

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING							FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency			Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horisontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Gary F–1–1½	3	1/8	1	3/4	V	.....	.....	.....	.....	.....	1	F	11½	3	1/4	4	11½	3	1/4	4	97 3/8	.....	.....	34	11½
Gary I–2	4	1/4	1¼	3/8	V	13½	2	12	1¼	32	1¼	F	12	3¼	1/4	4	12	3¼	1/4	4	120	72	214	34	10¾
Gary J–2½	4	1/4	1¼	3/8	V	10	2	12	1¼	36	2	F	13½	3½	1/4	4	13½	3½	1/4	4	120	76	214	34	10
Gary K–3½	4	1/4	1¼	3/8	V	13	2	16½	1¼	36	2	F	15¾	3¾	1/4	4	15¾	3¾	1/4	4	148	86	247	36¾	10¾
Gary M–5	4	1/4	1½	3/8	V	14	2	18	1⅜	.....	2	F	18¼	4	1/4	4	18¼	4	1/4	4	168	99	275	39	10¼
Giant 16–2½	3	1/4	.....	.....	.....	7½	1¼	11½	1¼	36½	3/4	F	13 3/8	3½	1/4	8	13 3/8	3½	1/4	8	140½	.....	.....	33	.....
Giant 17–3½	3	1/8	1½	.....	.....	9½	1¾	12	1¼	36	3/4	V	15 5/8	3¾	1/4	8	15 5/8	3¾	1/4	8	183½	.....	.....	36	.....
G.M.C. K–16	4	1/8	1¼	1 5/8	V	8¾	1½	8 1/8	1½	33½	1 11/16	R	49 5/8	2⅜	1/8	1	47	2⅛	1/8	1	89	57	183½	34	8¾
G.M.C. K–20	4	1/4	1¼	1 5/8	V	10	1¾	9½	1¾	35¾	1 11/16	R	49 5/8	2⅜	1/8	2	47	2⅛	1/8	2	.....	.....	242½	34	9¾
G.M.C. K–71	4	1/4	1¼	1 5/8	V	11¾	1¾	9½	1¾	35¾	1 11/16	R	15⅛	3¾	1/4	2	15⅛	3¾	1/4	2	Opt	Opt	Opt	38	10¼
G.M.C. K–101	4	1/4	1¼	1 5/8	V	11¾	1¾	9½	1¾	35¾	1 11/16	R	17¾	4	1/4	2	17¾	4	1/4	2	Opt	Opt	Opt	38	9¾
G.M.C. K–41	4	1/4	1¼	1 5/8	V	10	1¾	9½	1¾	35¾	1 11/16	R	13	3½	1/4	2	13	3½	1/4	2	Opt	Opt	Opt	33	9½
Gotfredson 20–1	4	1/8	1	1	V	9¼	1⅝	10½	1¼	32½	1¾	F	11½	2½	1/4	4	11½	2½	1/4	4	88 1/16	56 11/16	182½	69	11½
Gotfredson 40–1½–2	4	1/4	1	1	V	9¼	1¾	13½	1¼	32⅛	1½	F	12	3¼	1/4	4	12	3¼	1/4	4	120 1/8	69 1/16	214½	70	12
Gotfredson 50–2½	4	1/4	1¼	1¼	V	11	2	16¼	1¼	41	1¾	F	13½	3½	1/4	4	13½	3½	1/4	4	127	81 1/16	222	75 1/16	9½
Gotfredson 80–4	4	1/4	1¼	1½	V	14	2	18	1¼	43	2	F	15¾	3¾	1/4	4	15¾	3¾	1/4	4	157	89 9/16	247 3/8	85½	9⅞
Gotfredson 100–5	4	1/4	1½	1½	V	14	2	19	1½	42 5/8	2	F	18	4	1/4	4	18	4	1/4	4	155¾	89¾	261¼	89	9⅞
Graham Bros	3	1/8	1	1/4	V	9	1½	7¼	1¼	34½	1	F	50	2½	1/4	2	20	1½	1/4	2	98	58	194¼	33½	10¼
Gramm-Pioneer 10 Speed–1	3	1/8	1	1½	V	12	2¼	14½	2¼	29	1	F	48	2	1/4	2	26	2	1/4	1	97	54	180	30½	.....
Gramm-Pioneer 15–1½–2	3	1/8	1	1½	V	10¼	2	6	2	39	1¼	F	48½	2	1/4	2	45 5/16	1½	1/4	2	120	74	205 11/16	32	.....
Gramm-Pioneer 65–1½–2	3	1/8	1	1½	V	10¼	2	6	2	39	1¼	F	19¾	1¾	1/4	4	19¾	1¾	1/4	4	120	74	205 11/16	32	.....
Gramm-Pioneer 125	3	1/8	1¼	1½	V	4½	1½	12	1½	32	2	F	8	5	1/4	2	45	2	1/4	4	126	77 3/16	214	32	.....
Gramm-Pioneer 30–3	3	1/4	1¼	1½	V	11	1½	9	1½	33¾	2	F	22¾	2¼	1/4	4	22¾	2¼	1/4	4	129¾	81¾	226¾	36	.....
Gramm-Pioneer 75P–3½	3	1/4	1¼	1½	V	11	1½	9	1½	33¾	2	F	22¾	2¼	1/4	4	22¾	2¼	1/4	4	129¾	.....	.....	36	.....
Gramm-Pioneer 40–4	3	1/4	1¼	1½	V	11	1½	9	1½	33¾	2	F	28¾	2¾	1/4	4	28¾	2¾	1/4	4	144	87¾	240¾	36	.....
Gramm-Pioneer 50–5–6	3	1/4	1½	1¾	V	23¼	2	13¾	1⅞	40¾	2	F	32 11/16	2¾	1/4	4	32 11/16	2¾	1/4	4	132	97	263½	36	.....
G. W. W	3	1/4	1¼	1¾	V	12	1¾	11	1¾	37	2	F	49	2½	1/4	2	47	1½	1/8	2	89	72	192	32	11½
Harvey WOA–2	4	1/4	1¼	2	V	11	2	14	1¼	35 5/8	2	F	45	2	1/4	2	45	2	1/4	2	139	87	242¼	32	10
Harvey WFB–2½	4	1/4	1¼	2	V	11	2	14	1¼	35 5/8	2	F	50	2¼	1/4	2	50	2¼	1/4	2	139	87	242¼	32	10
Harvey WHB–3½	4	1/4	1½	2	V	12	2	14	1¼	35 5/8	2	F	56½	2½	1/4	2	56½	2½	1/4	2	153¾	85¾	260⅞	35	9
Harvey WFT–6	4	1/4	1¼	2	V	11	2	14	1¼	35 5/8	2	F	50	2¼	1/4	2	50	2¼	1/4	2	88	52	189 1/8	32	10
Harvey WHT–10	4	1/4	1½	2	V	12	2	14	1¼	35 5/8	2	F	56½	2½	1/4	2	56½	2½	1/4	2	93	52½	191⅞	35	9
Hawkeye O	4	1/8	....	1	V	12	2	9	1⅛	.....	1½	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye K	4	1/8	....	1	V	12	2	9	1⅛	.....	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye M	4	1/4	....	1¼	V	12	2¼	9	1½	.....	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye N	4	1/4	....	1¼	V	14	2½	12	1½	.....	2½	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hendrickson N–2½	3	1/4	1¼	1/8	....	.....	.....	.....	.....	.....	.....	...	12	3½	1/8	4	12	3½	1/8	4	Opt	.....	.....	32½	.....
Hendrickson M–3½	3	1/4	1¼	1/8	....	.....	.....	.....	.....	.....	.....	...	16	3¾	1/8	4	16	3¾	1/8	4	Opt	.....	.....	36	.....
Hendrickson K–5	3	1/4	1½	1/8	....	.....	.....	.....	.....	.....	.....	...	18	4	1/8	4	18	4	1/8	4	Opt	.....	.....	38	.....
Hurlburt A1½–2	3	....	1¼	1	....	.....	.....	.....	.....	.....	.....	...	22	2	1/4	2	22	2	1/4	2	132	.....	.....	35½	.....
Hurlburt B2½	3	1/8	1¼	1	....	.....	.....	.....	.....	.....	.....	...	24	2½	1/4	2	23	2½	1/4	2	154	.....	.....	34	.....
Hurlburt C3½–4	3	1/4	1½	1¼	....	.....	.....	.....	.....	.....	.....	...	26	3	1/4	2	25	3	1/4	2	144½	.....	.....	34	.....
Hurlburt D5–5½	3	1/4	1½	1¼	....	.....	.....	.....	.....	.....	.....	...	28	3	1/4	2	27	3	1/4	2	144½	.....	.....	34	.....
Indiana 12–1½	3	1/4	1	....	....	17	1¼	14	1¼	38½	1	F	17½	2	1/8	4	17½	2	1/8	4	108	98 1/16	189 5/8	32	10⅛
Indiana 20–2	3	1/4	1¼	....	....	6	1¼	13	1¼	26 5/8	1½	F	44	2	1/4	2	44	2	1/4	2	126	126	226¾	33	10¼
Indiana 25–2½	3	1/4	1¼	....	....	6	1¼	13	1¼	26 5/8	1½	F	51	2¼	1/4	2	51	2¼	1/4	2	138	138	238¾	33	9¾
Indiana 35–3½	3	1/4	1¼	....	....	6	1¼	13	1¼	26 5/8	1½	F	56	2½	1/4	2	56	2½	1/4	2	144	144	244 1/8	34½	8¾
Indiana 51–5	3	1/4	1½	....	....	10	1½	17½	1½	40½	1¾	F	68	3	1/4	2	68	3	1/4	2	156	156¼	260	37½	10½
Inter'l S—2000 lbs.–Sp. Tr.	3	1/4	1¼	1¼	V	9¾	2¼	17¾	2¼	30¼	1	F	38	2	1/8	2	36	2	1/8	2	88	.....	.....	34	.....
International 21–2000 lbs	3	1/4	1¼	1¾	V	6	1½	3½	1½	38 1/16	1⅛	F	43¾	2¼	1/8	2	43¾	2¼	1/8	2	76	.....	.....	34	.....
International 31–3000 lbs	3	1/4	1¼	1¾	V	6	1½	3½	1½	38 1/16	1⅛	F	43¾	2¼	1/8	2	43¾	2¼	1/8	2	106½	.....	.....	34	.....
International 41–4000 lbs	3	1/4	1¼	1¾	V	6	1½	3½	1½	38 1/16	1⅛	F	50 5/8	2¼	1/8	2	50 5/8	2¼	1/8	2	111 1/16	.....	.....	32¼	.....
International 52–Bus	4	1/4	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	10 3/8	2¼	1/4	2	50 5/8	3	1/8	2	216	.....	.....	34	.....
International 61–6000 lbs	4	1/4	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	50 5/8	2¼	1/8	2	50 5/8	2¼	1/8	2	118 11/16	.....	.....	34	.....
International 62 Tractor Tr	4	1/4	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	50 5/8	2¼	1/8	2	50 5/8	2¼	1/8	2	.....	.....	.....	34	.....
International 101–10,000	4	1/4	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	73 1/16	2½	1/16	2	73 1/16	2½	1/16	2	147 5/16	.....	.....	34	.....
International 102 TractorTr	4	1/4	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson B–3½	3	1/8	1¼	1½	V	11	.....	.....	.....	32½	1¼	F	58½	3½	1/4	2	.....	.....	.....	.....	150	.....	.....	36	.....
Kalamazoo G–1	3	1/4	2 1/16	1 1/16	....	15½	1½	8	1½	40	1½	F	50	2½	1/8	1	34	2½	1/8	1	120	77 1/16	212	32½	9
Kalamazoo LG	3	1/4	2 1/16	1 1/16	....	6	1½	16	1¼	39	1½	F	50	2½	1/8	1	34	2½	1/8	1	120	77 1/16	212	32½	10
Kalamazoo NH	3	1/4	2 1/16	1 1/16	....	20	1¾	19½	1½	42	2	F	52	2¼	1/4	1	52	2¼	1/4	1	144	88 11/16	241	33	10
Kalamazoo HD	3	1/4	2 1/16	1 1/16	....	20	1¾	19½	1½	42	2	F	52	2¼	1/4	1	52	2¼	1/4	1	120	88 11/16	241	33	10
Kalamazoo SK	3	1/4	2 1/16	1 1/16	....	20	1¾	19½	1½	42	2	F	57	2½	1/4	1	57	2½	1/4	1	152	88 11/16	247	36	9
Kalamazoo OK	3	1/4	2 1/16	1 1/16	....	20	1¾	19½	1½	42	2	F	68	3	1/4	1	68	3	1/4	2	152	88 11/16	247	36	10⅛
Kearns H–1	3	1/8	1	1/8	H	16	2	16	2	33	1	F	42	2	1/8	1	21	2	1/8	2	90	.....	.....	34	.....
Kearns N–1½	3	1/8	1	1/8	H	18	2	18	2	33	1	F	45	2⅛	1/8	1	22	2¼	1/8	2	120	.....	.....	34	.....
Kelly-Springfield K34–1½	4	1/8	1 3/16	1½	V	7	1½	13	1½	54½	1	V	17 3/8	1⅞	1/8	4	17 3/8	1⅞	1/8	4	138	.....	.....	34	.....
Kelly-Springfield K35–2½	4	1/8	1 1/16	1½	V	7	1½	13	1½	55½	1	V	16¾	1⅞	1/8	4	16¾	1⅞	1/8	4	138	.....	.....	34	.....
Kelly-Springfield K38–2½	4	1/8	1 1/16	1½	V	7	1½	13	1½	55½	1	V	17 3/8	1⅞	1/8	4	17 3/8	1⅞	1/8	4	138	.....	.....	34	.....
Kelly–Springfield K–39–2½	4	1/8	1 1/16	1 11/16	V	12¼	1½	25 7/16	1½	65 5/8	1	F	3 1/8	4½	1/4	12	48	2½	1/8	2	141	.....	.....	34	.....
Kelly-Springfield K40–3½	4	1/4	1 1/16	1 11/16	V	5 1/16	1 5/8	24	1½	63 5/8	1	V	21	2⅞	1/8	4	21	2⅞	1/8	4	145	.....	.....	38	.....
Kelly-Springf'd K41–3½–5	4	1/4	1 1/16	1 11/16	V	5 1/16	1 5/8	24	1½	60 5/8	1	V	3 1/8	4½	1/4	12	58	2½	1/8	2	144	.....	.....	36	.....
Kelly-Springfield K42–3½	4	1/4	1 1/16	1 11/16	V	5 1/16	1 5/8	24	1½	60 5/8	1	V	27½	2¾	1/4	4	27½	2¾	1/4	4	144	.....	.....	36	.....
Kelly-Springfield K50–5	4	1/4	1 1/16	1 11/16	V	5 1/16	1 5/8	24	1½	63 5/8	1	V	21	2⅞	1/8	4	21	2⅞	1/8	4	145	.....	.....	38	.....
Kelly-Springfield K60–6	4	1/4	1 1/16	1 11/16	V	5 1/16	1 5/8	24	1½	63 5/8	1	V	21	2⅞	1/8	4	21	2⅞	1/8	4	145	.....	.....	38	.....
Kelly-Sprinf'd K61–5 to 7	4	1/4	1 1/16	1 11/16	V	5 1/16	1 5/8	24	1½	60 5/8	1	V	3 1/8	4½	1/4	12	58	2½	1/8	2	142	.....	.....	36	.....
Kenworth KS–2½	4	1/4	1¼	1¼	H	12	2	14	1¼	36	2	...	20	2¼	1/4	4	20	2¼	1/4	4	133	.....	.....	34	.....
Kenworth M–1½	4	1/4	1¼	1¼	H	12	2	14	1¼	36	2	...	46	2	1/4	2	46	2	1/4	2	114	.....	.....	32	.....
Kenworth L–3	4	1/4	1¼	1¼	H	13½	2	16	1¼	36	2	...	56	2½	1/4	2	56	2½	1/4	2	144	.....	.....	36½	.....
Keystone 40–2	3	1/4	1	1/4	V	8	2⅛	8	2⅛	38	1	F	50½	3	1/4	1	46¾	2	1/4	1	124	80	214	33	12
Kissel 1 Ton	3	1/8	....	1¼	....	12¼	1¾	10	1½	46¾	2	F	11	3	1/4	4	11	3	1/4	4	102	.....	.....	34	.....
Kissel-Utility 1½	3	1/8	....	1¼	....	12¼	1¾	10	1½	46¾	2	F	19	2	1/8	4	19	2	1/8	4	120	.....	.....	34	.....
Kissel-Freighter 2	3	1/8	....	1¼	....	12¼	1¾	10	1½	49	2	F	14	3½	1/4	4	14	3½	1/4	4	144	.....	.....	34	.....
Kissel-Heavy-Duty–4	3	1/8	....	1¼	....	13¾	1¾	10	1½	52¼	2	F	56	2½	1/8	2	56	2½	1/8	2	156	.....	.....	36	.....
Lange F	4	1/4	1 3/16	1 5/16	V	6	1½	15½	1½	45	1½	F	15¾	3¾	1/4	4	15¾	3¾	1/4	4	135	84	212½	37	14
Lange E–2½	3	1/4	1	1 5/16	V	9	1½	15½	1½	42	1½	F	18	3½	1/4	4	18	3½	1/4	4	138	118 1/16	207 11/16	33	10
Larrabee X2–1–1¼ Ton	3	1/8	1¼	1¾	V	6	1¼	14	1¼	34	1¼	F	48	2	1/8	2	48	2	1/8	2	108	59	205	34	11
Larrabee J4–1½–2¼ Ton	4	1/8	1	1½	V	6½	1¼	10	1½	41	1¼	F	24	2	1/4	4	24	2	1/4	4	108	67½	199	34	10⅛
Larrabee K4–2½–3¼ Ton	4	1/4	1¼	1¾	V	6	1½	11	1½	48	1½	F	27	2¼	1/4	4	27	2¼	1/4	4	Opt	77	219	34	9¾
Larrabee L4–3½–4½ Ton	4	1/4	1¼	1¾	V	6	1½	11	1½	48	1½	F	60	2½	1/4	2	60	2½	1/4	2	Opt	81	224	36	9
Larrabee W–5–7	4	1/4	1½	2¼	V	8½	2	17½	2	44½	2	F	72	3	1/4	2	72	3	1/4	2	152	.....	.....	36	.....
Luedinghaus K2	3	1/4	1¼	1 11/16	....	9	1¼	5	1¼	.....	1½	F	53.4	2½	1/4	2	38½	2½	1/4	2	120	.....	.....	34	.....
Luedinghaus K2–LS	3	1/4	1¼	1 11/16	....	9	1¼	5	1¼	.....	1½	F	53.4	2½	1/4	2	38½	2½	1/4	2	145½	.....	.....	34	.....
Maccar L–1, 1½	4	1/4	1¼	3/4	V	4	1¾	19	1½	35	2	F	11 5/16	3¼	1/4	4	11 5/16	3¼	1/4	4	125¾	74¼	228½	34	10 5/16
Maccar H–1, 3	4	1/4	1¼	3/4	V	4	1¾	19	1½	37½	2	F	13 1/16	3½	1/4	4	13 1/16	3½	1/4	4	139¾	79¾	243⅜	34	10
Maccar M–2, 4	4	1/4	1¼	3/8	V	4	1¾	19	1½	37½	2	F	14¼	3¾	1/4	4	14¼	3¾	1/4	4	153¾	91½	257⅜	34	8¾

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Maccar G–1, 5	4	¼	1½	⅜	V	8	1¾	16½	1¾	40¾	2	F	18	4	¼	4	18	4	¼	4	163⅞	99⅞	278	37½	10
MacDonald O–5	4	¼	1	....	V	9	1¾	10	1⅜	33 1/16	1½	F	31½	2½	¼	2	18½	2½	¼	2	Opt	.....	.....	.....	.....
MacDonald A–7	4	¼	1¼	....	V	12	2	21	1¼	35	2	F	70	3	¼	1	34	3	¼	1	.....	.....	.....	.....	.....
MacDonald AB–7½	4	¼	1¼	....	V	12¼	2	8	1¼	34¼	2	F	33½	3	¼	2	18½	3	¼	2	176	.....	.....	.....	.....
Mack AB–1½, 2, 2½–T.–Ch	3	¼	1¼	1½	V	7¼	1½	5⅝	1¼	36⅝	1¼	F	11⅝	4	¼	2	16½	2½	¼	4	Opt	.....	.....	33¼	.....
Mack Dual R'd'n–1½, 2, 2½	3	¼	1¼	1½	V	7¼	1½	5⅝	1¼	36⅝	1¼	F	18¼	3½	¼	4	12	6	¼	4	Opt	.....	.....	33¼	.....
Mack AB–Tractor–5	3	¼	1¼	1½	V	7¼	1½	5⅝	1¼	36⅝	1¼	F	11⅝	4	¼	4	16½	2½	¼	4	77	.....	.....	33½	.....
Mack AC–3½, 5, 6½, 7½	3	¼	1½	1½	V	5¾	2	3¼	2	.....	.....	...	16½	3	¼	4	20½	3½	¼	4	Opt	.....	.....	37½	.....
Mack AC–Trac.–7,10,13,15	3	¼	1½	1½	V	5¾	2	3¼	2	.....	.....	...	16½	3	¼	4	20½	3½	¼	4	87	.....	.....	37½	.....
Mason Road King	3	¼	1⅝	....	V	11⅝	2	14½	1½	.....	1½	F	42 1/16	2¾	¼	1	40⅝	2¾	¼	2	85	56 11/16	175	30	10
Master 22–1½	4	¼	1¼	1 11/16	V	13½	2	12½	1¼	30½	1	F	12	3¼	¼	2	12	3¼	¼	2	Opt	.....	.....	34 1/16	.....
Master 41–2½	4	¼	1¼	1 11/16	V	13½	2	12½	1¼	31	1¼	F	13¼	3½	¼	2	13¼	3½	¼	2	117⅜	.....	.....	34	.....
Master 51–3½	4	¼	1½	1 11/16	V	13½	2	15	1¼	35	2	F	16	3¾	¼	2	16	3¾	¼	2	147¾	.....	.....	36¾	.....
Master 61–5	4	¼	1½	1 11/16	V	13½	2	15	1¼	35	2	F	13¼	4	¼	2	18	4	¼	2	162⅞	.....	.....	36¾	.....
Master 64–5–6	4	¼	1½	1 11/16	V	13½	2	15	1¼	37	2	F	13¼	4	¼	2	18	4	¼	2	162⅞	.....	.....	39	.....
Maxwell 1½	3	⅛	1	1	V	7¾	2⅛	3½	2⅛	36½	5/8	...	31	1½	¼	4	19¾	1¾	¼	1	102	.....	.....	36	.....
Menominee Hurryton–1	3	¼	1¼	1¾	V	6	1½	12	1¼	40	1¼	F	11	2½	¼	4	11	2½	¼	4	102 1/16	.....	197	33	10½
Menominee H–1½	3	¼	1¼	1¾	V	.....	.....	.....	.....	.....	.....	...	13½	3½	¼	8	.....	.....	.....	...	122	.....	216	32	10⅜
Menominee D–2½	3	¼	1¼	1¾	V	3	1¾	3	1½	37¾	2	F	13½	3½	¼	8	42½	2½	1/16	2	146	.....	224	32	10⅜
Menominee HT–1¼	3	¼	1	1½	V	9¼	1¾	10½	1¼	33¾	1¼	F	47 1/16	2½	1/16	2	33¼	2½	1/16	2	102¾	.....	192	32	10⅜
Menominee J–3, 5	3	¼	1½	2	V	3	1¾	3	1¾	40¾	2	F	69 1/16	3½	1/16	2	52	2½	1/16	2	149	.....	246	38	9
Menominee G–3½	3	¼	1¼	1¾	V	3	1¾	3	1¾	37¾	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	149	.....	246	36	9
Moreland RR	3	¼	1	1¼	V	8	1½	11¼	1½	34	1¾	F	49	2½	¼	2	46	2½	1/16	2	108	56 1/16	208⅜	34	.....
Moreland BX–1½	3	¼	1	1⅛	V	8	1½	11¼	1½	34	1¾	F	12	3¼	¼	4	12	3¼	¼	4	108	56 1/16	208⅜	34	.....
Moreland EX–2	3	¼	1¼	1½	V	9	1½	14	1½	42	1¾	F	12	3¼	¼	4	12	3¼	¼	4	132	79½	226¼	34	.....
Moreland AX–3	3	¼	1¼	1½	V	9	1½	13	1½	42	1¾	F	13½	3½	¼	4	13½	3½	¼	4	174	101½	253	34	.....
Moreland RX–5	4	¼	1½	1¾	V	8	1½	14½	1½	42	2	F	15½	3¾	¼	4	15½	3¾	¼	4	192	115¼	271	38	.....
Moreland RC–Bus	3	¼	1	1¼	H	8	1½	11¼	1½	34	1½	F	49	2½	¼	2	46	2½	¼	2	156	100	256	34	7
Moreland EC–Bus	3	¼	1¼	1½	H	9	1½	13	1½	42	1½	F	13½	3½	¼	4	13½	3½	¼	4	152	102	254	34	8
Moreland AC–Bus	3	¼	1¼	1½	H	9	1½	13	1½	42	1½	F	15½	3¾	¼	4	15½	3¾	¼	4	171	114¼	271	44	7
Nash 2018–1–1½	4	¼	1¼	1¼	....	3	1½	7¾	1¼	36	1	F	49 1/16	2	1/16	2	20 1/16	2½	1/16	1	104½	61	193	30½	9¼
Nash 3018–2–2½	4	¼	1¼	1¼	....	3	1½	.....	.....	44	1	F	50 1/16	3	1/16	2	20 1/16	2½	1/16	1	118¼	65	207	31 1/16	9¼
Nash 4017–2–2½	3	¼	1¼	1¼	....	7	1½	.....	.....	44	2	F	49 1/16	2 1/16	1/16	4	25 1/16	2½	1/16	1	117⅜	85½	202½	38⅛	14¾
Nelson & LeMoon G–2	4	¼	1¼	1 1/16	V	9	1⅝	3½	1⅝	41¼	1¼	...	12	3¼	¼	2	12	3¼	¼	2	Opt	.....	.....	.....	11
Nelson & LeMoon G–3	4	¼	1¼	1 1/16	V	9	1⅝	3½	1⅝	41¼	1¼	...	13½	3½	¼	2	13½	3½	¼	2	Opt	.....	.....	.....	11
Nelson & LeMoon G–4	4	¼	1¼	1 1/16	V	9	1⅝	3½	1⅝	41¼	1¼	...	16½	3¾	¼	2	16½	3¾	¼	2	Opt	.....	.....	.....	11
Nelson & LeMoon G–5	4	¼	1½	1 1/16	V	12	2	6	2	40½	2	...	18	4	¼	2	18	4	¼	2	Opt	.....	.....	.....	11
Netco DK–2	3	1/16	1¼	1 1/16	V	12	1½	16	1¼	40 1/16	1½	F	13 1/16	3½	¼	4	13 1/16	3½	¼	4	142	94	234½	34¼	9
Netco HL–2½–3	3	1/16	1½	1 1/16	V	13	1½	16	1¼	41¼	1½	F	13 1/16	3½	¼	4	13 1/16	3½	¼	4	139½	93½	234½	34¼	9
Niles E–2	3	1/16	1¾	1 1/16	V	8	1¼	11	1¼	30	¾	F	12	3¼	¼	2	12	3¼	¼	2	147	75	202	56	9½
Niles H–2½	4	¼	1¼	1¾	V	12	2	10	1¼	35	2½	F	13 1/16	3½	¼	2	13 1/16	3½	¼	2	147	75	214	34¼	9½
Noble A21–1¼	4	1/16	1	1 1/16	....	10	1¾	12½	1¼	33½	1½	F	19	2	¼	4	19	2	¼	2	102	74	203	34	.....
Noble B31–2	4	1/16	1	1 1/16	....	7	1⅛	16½	1¼	34¼	1⅛	F	43	2	¼	2	43	2	¼	2	126	80	221	34	.....
Noble D51–2½	4	¼	1¼	1 1/16	....	9	2	12	1¼	34¾	1⅛	F	21	2¼	¼	4	21	2¼	¼	4	.....	101	207	34	.....
Noble E71—3½	4	¼	1¼	1 1/16	....	14½	2	16	1¼	34¼	1⅛	F	57	2½	¼	2	57	2½	¼	2	.....	114	218	36	.....
Northway B–2–2	3	1/16	1¼	1 1/16	V	5½	2¼	13 7/16	1¼	46 11/16	5/8	V	50½	2¼	¼	2	50½	2¼	¼	2	133	62	223½	33	9
Northway B–3–3½	3	1/16	1¼	1¾	V	5¼	2¼	13 7/16	1¼	46 11/16	5/8	V	54	2½	¼	2	54	2½	¼	2	173	92	253¼	34⅝	11
Ogden A–2–¾	3	1/16	1	1	H	12	2	6	2	44	¾	V	11	2½	¼	4	11	2½	¼	4	108	56	186	33¼	10¼
Ogden D–1½	3	1/16	1	1	V	13	2	12	2	44	¾	V	10 11/16	3	¼	4	10 11/16	3	¼	4	120	.....	.....	33¼	.....
Ogden E–2½	3	1/16	1¼	2	V	10	1 1/16	14	1 1/16	30	1¼	F	52	2¼	¼	1	52	2¼	¼	1	144	.....	.....	33¼	.....
Ogden F–3½	3	1/16	1¼	2	V	11	1/16	16	1½	36	1½	F	15⅝	3¾	¼	4	10¾	3¾	¼	4	168	.....	.....	37	.....
Ogden G–5	3	1/16	1½	3	V	9	2	18	2	40	2	F	11	6	¼	2	25	4	¼	4	168	.....	.....	37	.....
O. K.–1½	4	1/16	1¼	1 11/16	V	12	2	13½	1¼	36	2	F	53	2½	1/16	2	38	2½	1/16	2	117	.....	.....	34	.....
O. K.–2½	4	1/16	1¼	1 11/16	V	12	2	13½	1¼	36	2	F	62	2½	1/16	2	48	2½	1/16	2	121	.....	.....	35	.....
O. K.–3½	4	1/16	1¼	1 11/16	V	12	2	13½	1¼	38	2	F	62	2½	1/16	2	48	2½	1/16	2	133	.....	.....	34	.....
Old Reliable B–2½	3	1/16	1½	1¼	.....	.....	.....	.....	.....	.....	.....	...	54	2	¼	1	54	2	¼	1	144	.....	.....	32	.....
Old Reliable C–3½	3	1/16	1½	1½	.....	.....	.....	.....	.....	.....	.....	...	60	2½	¼	1	60	2½	¼	1	150	.....	.....	32	.....
Old Reliable D–5	3	1/16	1½	1½	.....	.....	.....	.....	.....	.....	.....	...	72	3	¼	1	72	3	¼	1	156	.....	.....	34	.....
Old Reliable K. L. M.–7	3	1/16	1½	1½	.....	.....	.....	.....	.....	.....	.....	...	54	3½	¼	1	60	4	¼	1	158	.....	.....	36	.....
Oldsmobile T–1	3	1/16	1 1/16	1 1/16	V	6¼	1¼	10½	1¼	40½	¾	V	42¼	2	1/16	2	41 1/16	2	1/16	1	92⅛	60⅞	177¾	34	12¼
Olympic A–2½	4	1/16	1¼	1½	V	13	2	12	1¼	34	2	F	13½	3½	¼	2	13½	3½	¼	2	Opt	84	240	32½	10
Oneida B9–2	3	1/16	1¼	1½	H	9½	1¼	9½	1¼	38½	2	F	48	2½	1/16	2	34	2½	1/16	2	114	.....	.....	34	.....
Oneida C9–2½	3	1/16	1¼	1½	H	9½	1¼	9½	1¼	38½	2	F	58	2½	1/16	2	43	2½	1/16	2	138	.....	.....	34	.....
Oneida D9–3½	3	1/16	1¼	1½	H	7	1½	9½	1½	40	2	F	16	3¾	1/16	4	16	3¾	1/16	4	155¾	.....	.....	36	.....
Oneida E9–5	3	1/16	1¼	1½	H	7½	1⅝	9½	1½	40	2	F	18	4	1/16	4	18	4	1/16	4	177	.....	.....	38	.....
Oshkosh A–2	3	1/16	1¼	1½	H	16	2	17	2	33¼	1¼	F	23⅛	3½	1/16	1	43½	2½	1/16	2	108	75⅝	189	34	.....
Oshkosh AA–2	3	1/16	1¼	1½	H	16	2	17	2	33¼	1¼	F	23⅜	3½	1/16	1	43½	2½	1/16	2	144	110⅜	224	34	.....
Oshkosh B–2½	4	1/16	1¼	1¾	V	9¾	1½	12	1½	36½	2	F	23⅝	4½	1/16	1	43½	2½	1/16	2	125	85½	211	34	.....
Oshkosh BB2½	4	1/16	1¼	1¾	V	9¾	1½	12	1½	36½	2	F	23⅝	4½	1/16	1	43½	2½	1/16	2	144	104½	230	34	.....
Overland ½	4	1/16	1 1/16	1⅝	H	12	2 1/16	7¼	2 1/16	33¼	⅞	F	31 1/16	1½	1/16	2	27 1/16	1¼	1/16	2	Opt	Opt	127¼	26	9½
Packard EC	3	⅛	1⅝	1¾	V	6¼	1½	10⅜	1½	41 1/16	5/8	V	7 11/16	4¾	¼	2	14	2	1/16	4	132	81½	219 1/16	31¾	9¼
Packard ED	3	⅛	1⅝	1¾	V	6¼	1½	10⅜	1½	43 1/16	5/8	V	9 1/16	4¾	¼	2	17	3	1/16	4	144	89⅞	235 1/16	39	9
Packard EF	3	¼	1⅝	1¾	V	6¼	1½	10⅜	1½	43 1/16	5/8	V	9 1/16	6½	¼	2	18¾	3½	1/16	4	144	119⅞	283 1/16	39	9½
Packard EX	3	¼	1⅝	1¾	V	6¼	1½	10⅜	1½	41 1/16	5/8	V	7 11/16	4¾	¼	2	14	2	1/16	4	132	81½	219 1/16	31¾	12
Parker B–23	4	1/16	1	1¼	V	9	2	6	1¼	32	1½	F	42	2¾	1/16	2	42	2¾	1/16	2	94½	58½	184½	33	10
Parker E–23	3	1/16	1	1¼	V	4	1¼	16	1¼	37¾	1¼	F	11¾	3¼	¼	4	11¾	3¼	¼	4	113½	70½	200	33	9¾
Parker G1–2½	3	1/16	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	2½	¼	4	127	79	219	33	9¾
Parker J20–3½	3	1/16	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	3½	¼	4	139½	90	231½	33	11
Parker M20–5	3	1/16	1½	1¾	V	14	1¾	18	1¾	40½	2	F	10¾	5	¼	2	24½	4	¼	4	145	83½	243½	37	10¼
Patriot Revere–1	3	1/16	1 1/16	⅜	H	8	2	9	2	39	1¼	F	40½	1¾	1/16	1	40½	1¾	1/16	1	93	56	184	33¼	11¾
Patriot Lincoln Special–2	3	1/16	1 1/16	⅜	V	6	1¼	8	1½	37	1¾	F	40½	1¾	1/16	1	40½	1¾	1/16	1	113	65	207	34	10
Patriot Washington Spl.–3	3	1/16	1 1/16	⅜	V	11	1½	10	2	39	2	F	58	2½	1/16	1	43	2½	1/16	1	150	82	246	34	10
Penn	3	1/16	1	....	V	8	2⅛	8	2⅛	38	1	F	50½	3	1/16	1	46¾	2	1/16	1	124	80	214	38	12
Perfection A	3	1/16	1	1/16	V	9	2	6	2	43¾	5/8	V	10 1/16	2½	1/16	4	10 1/16	2½	1/16	4	95¾	67¼	175	32	10½
Perfection B	3	1/16	1	1/16	V	9	2	6	2	43¾	5/8	V	10 1/16	2½	1/16	4	10 1/16	2½	1/16	4	104¾	76¾	184	32	10½
Perfection C	4	1/16	1¼	1⅝	V	9½	2	14	1½	41½	1½	F	10	2½	1/16	4	10	2	1/16	4	117⅝	78⅝	217	34	10¼
Perfection D	4	1/16	1¼	1⅝	V	9½	2	14	1½	41½	1½	F	10	2½	1/16	4	10	2	1/16	4	103⅝	64⅝	203	34	9½
Perfection E	4	1/16	1½	1⅞	V	12	2	6	2	40¾	2	F	12	3¼	1/16	4	12	2¼	1/16	4	116¾	80¼	205	38	12½
Perfection EA	4	1/16	1½	1⅞	V	12	2	6	2	40¾	2	F	12	3¼	1/16	4	12	2¼	1/16	4	146¾	110¼	235	38	12½
Pierce Arrow XA–2	3	1/16	1 1/16	1⅝	V	16⅜	2⅜	14¼	2⅛	43½	1½	F	22 1/16	2¼	1/16	4	22 1/16	2¼	1/16	4	125 1/16	70 11/16	225	34⅛	8⅛
Pierce Arrow XB–3	3	1/16	1 1/16	1⅝	V	16⅜	2⅜	14¼	2⅛	43½	1½	F	22 1/16	2¼	1/16	4	22 1/16	2¼	1/16	4	125 1/16	70 11/16	225	34⅛	8⅛
Pierce Arrow WC–4	3	1/16	1 11/16	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9 11/16	6	1/16	2	18	4¾	1/16	4	133¼	78¾	237	38⅛	7 11/16
Pierce Arrow WD–5	3	1/16	1 11/16	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9 11/16	6	1/16	2	18	4¾	1/16	4	133¼	78¾	237	38⅛	7 11/16
Pierce Arrow RE–6	3	1/16	1 11/16	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9 11/16	6	1/16	2	20⅞	4¾	1/16	4	139¼	84¾	243	38⅛	8 1/16
Pierce Arrow RF–7½	3	1/16	1 11/16	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9 11/16	6	1/16	2	20⅞	4¾	1/16	4	139¼	84¾	243	38⅛	8 1/16
Pierce Arrow XB–TT	3	1/16	1 11/16	1¼	V	16⅜	2⅜	14¼	2⅛	43½	1½	F	22 1/16	2¼	1/16	4	22 1/16	2¼	1/16	4	77 1/16	48 11/16	172½	34⅛	8⅛
Pierce Arrow WD–TT	3	1/16	1 11/16	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9 11/16	6	1/16	2	18	4¾	1/16	4	77¼	48¾	173⅝	38⅛	7 11/16
Pierce Arrow RF–TT	3	1/16	1 11/16	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9 11/16	6	1/16	2	20⅞	4¾	1/16	4	77¼	48¾	173⅝	38⅛	8 1/16
Pioneer 59AA–1	3	1/16	1¼	1¼	V	13	2	12	2	35	1	F	14	1¾	1/16	4	14	1¾	1/16	4	102	.....	.....	30	.....

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Pittsburgher 2½	3	⅜	1¼	1¼	V	6	1½	12	1¼	37	1	F	52	2¼	¼	2	52	2¼	¼	2	136	.....	.....	33	.....
Power F–2½	3	⅜	1	....	V	8	1¼	12¼	1¼	36	2	F	26	2	⅜	4	26	2	⅜	4	143	.....	.....	32	12
Power C–3½	3	¼	1¼	....	V	9	1½	12	1½	36	2	F	59	2¼	7/16	1	45	2¼	⅜	1	.....	.....	.....	.....	12
Rainier R31–¾	3	⅜	1	⅜	V	9	2	6	2	43¾	⅝	V	11	2½	¼	4	11	2½	¼	4	86½	50⅜	181	34	11¾
Rainier R-29–1	3	⅜	1	⅜	V	8	1½	14	1½	42	1¼	F	11	2½	¼	4	11	2½	¼	4	96½	57⅜	190¼	34	10¾
Rainier R36–1½	4	⅜	⅜	⅜	V	9½	1½	14	1½	42	1¼	F	11¾	3¼	¼	4	11	2¾	¼	4	111	72¼	206½	34	9⅝
Rainier R28–2–2½	4	¼	1¼	⅜	V	9½	1½	14	1½	42	1¼	F	20	2¼	¼	4	20	2¼	¼	4	124¾	80½	225	33	9⅝
Rainier R20–2½–3	4	¼	1¼	⅜	V	9½	1½	14	1½	42	1¼	F	13	3½	¼	4	13	3½	¼	4	137½	85½	241¾	33	10
Rainier R25–3½–5	4	¼	1½	⅜	V	9½	1½	14	1½	42	1¼	F	20	2¼	¼	4	20	2¼	¼	4	157½	91	263⅞	37	8¾
Rainier R27–6	4	¼	1½	⅜	V	5½	1	5½	1	42	1¼	F	15½	4	¼	4	15½	4	¼	4	154½	88	263⅞	37	9½
Reo F–2500 lbs.	4	¼	1	1¼	V	9	2	6	2	43¾	⅝	V	18	4	¼	4	18	4	¼	4	81 ⅜	55 ⅜	171	30	10½
Reynolds 23A–2	3	⅜	1	1¼	V	9	2	6	2	43¾	⅝	V	18	4	3/16	1	40 ⅜	3	⅜	1	136	.....	.....	33	.....
Reynolds 23B–3	3	⅜	1¼	1¼	V	8	1½	14	1½	40	1¼	F	45⅛	3	¼	4	40 ⅜	3	⅜	1	156	.....	.....	33	.....
Reynolds 23C–25-pas. Bus.	3	¼	1¼	1¼	V	9½	1½	14	1½	42	1¼	F	18	4	¼	4	18	4	¼	4	220	.....	.....	33	53⅝
Rowe CDW–2	3	¼	1¼	1¼	V	9½	1½	14	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	123	79	202½	33	10⅜
Rowe CDW–2½	4	¼	1¼	1¼	V	9½	1½	14	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	123	103½	224	33	9¼
Rowe GSW–3	3	¼	1¼	1¼	V	10½	1½	14	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	140	96¼	224	33	9¼
Rowe HW–4	3	¼	1¼	1¼	V	10½	1½	14	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	146	96	230½	36	9
Rowe FW–5	3	¼	1¼	1¼	V	10½	1¾	14	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	153	107¼	237½	38½	10½
Ruggles 15–¾	3	¼	1¼	1¼	V	10½	1¾	15½	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	128	97½	170	38½	9¼
Ruggles 20R–1¼	3	¼	1¼	1¼	V	10½	1¾	15½	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	96⅝	55⅜	186¾	34	11
Ruggles 20AR–1¼	3	¼	1¼	1¼	V	10½	1¾	15½	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	104½	65	194¾	34	11
Ruggles 40–2	3	¼	1¼	1¼	V	10½	1¾	15½	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	134¾	75½	224	34	8¼
Ruggles 40H–2½	3	¼	1¼	1¼	V	10½	1¾	15½	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	134¾	75½	224	34	9¼
Rumely A–1½	4	⅜	1¼	1¼	V	10½	1¾	15½	1½	42	1¼	F	24	2½	¼	4	24	2½	¼	4	134¾	75½	224	34	11
Sandow G–1	3	⅜	1¼	1	H	9	2	7	2	38¾	¾	V	22¼	2¼	¼	4	22¼	2¼	¼	4	122	72	214	34	11
Sandow C–G–1½	3	⅜	1¼	1¼	H	9	2	7	2	38¾	¾	V	22¼	2¼	¼	4	22¼	2¼	¼	4	96	.....	205	34	10½
Sandow J–2½	3	⅜	1¼	1¼	H	7	1¼	13	1¼	39	⅝	F	11¾	3½	¼	4	11¾	3½	¼	4	120	.....	.....	34	10½
Sandow M–3½	3	⅜	1½	1¼	V	9	1½	13	1¼	40	⅝	F	13½	4	¼	4	11¾	3½	¼	4	Opt	.....	.....	32	10½
Sandow L–5	3	⅜	1¾	1¼	V	9	2	7	2	38¾	¾	V	13½	4	¼	4	11¾	3½	¼	4	Opt	.....	.....	37	11
Sanford W15–1½	3	⅜	1	1	H	9	2	7	2	38¾	¾	V	13½	4	¼	4	11¾	3½	¼	4	Opt	.....	.....	37	11
Sanford 25–2½	3	⅜	1¼	1¼	H	9	2¼	11	1½	40	⅝	V	13½	4	¼	4	11¾	3½	¼	4	120	71¾	205¾	32	11
Sanford 35–3½	3	⅜	1¼	1¼	H	9	2¼	11	1½	40	⅝	V	13½	4	¼	4	11¾	3½	¼	4	144	109½	238	35	9¾
Sanford 50–5	4	¼	1¼	2	H	11	2	14	1½	37½	1⅛	V	22¼	2¼	¼	4	22¼	2¼	¼	4	144	97½	244	35	8¼
Schacht F–2	4	¼	1¼	2	H	11	2	14	1½	37½	1⅛	V	22¼	2¼	¼	4	22¼	2¼	¼	4	144	97½	244	35	10½
Schacht F–3	4	¼	1¼	2	H	10½	2	13½	1½	39¼	1⅛	V	55¾	2½	¼	4	55¾	2½	¼	4	140	.....	.....	35¾	.....
Schacht E–4	4	¼	1¼	2	H	10½	2	13½	1½	39¼	1⅛	V	65	2	¼	4	65	2	¼	4	140	.....	.....	35¾	.....
Schacht E–5	4	¼	1¼	2	H	10½	2	13½	1½	39¼	1⅛	V	8¼	3	¼	4	13½	3	¼	4	152	.....	.....	35¾	.....
Schacht E–7	4	¼	1	1	H	7½	1¾	13	1¼	36⅜	1⅛	V	8¼	3	¼	4	13½	3	¼	4	152	.....	.....	35¾	.....
Schwartz 1¼	4	¼	1	⅜	H	11	1¾	12	1¼	38⅜	1⅛	V	8¼	3	¼	4	15	4	⅜	4	152	.....	.....	35¾	.....
Schwartz 2	4	¼	1¼	⅜	H	11	2	19	1¼	38⅜	1⅛	V	8¼	3	¼	4	15	4	⅜	4	152	.....	.....	35¾	.....
Schwartz 3	4	¼	1¼	⅜	H	11	2	19	1¼	38⅜	1⅛	V	8¼	3¼	¼	4	15	4	⅜	4	112	73¾	207	34	10
Schwartz 4	4	¼	1½	⅜	H	12	2	18	1¼	41	1¼	V	11¾	2½	¼	4	11¾	2½	¼	4	131	81	233	33¼	9
Schwartz 5	4	¼	1½	⅜	H	12	2	18	1¼	41	1¼	V	11¾	3¼	¼	4	11¾	3¼	¼	4	166	98	270½	33¼	9½
Schwartz 5–7	4	¼	1	1½	H	6	1½	11½	1½	39¼	1½	V	13	3½	¼	4	13⅛	3½	¼	4	163	105	270½	38	8½
Selden 30C	4	¼	1	1	H	8⅜	1½	14¾	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	206½	115	318	38	8
Selden 50B	4	¼	1¼	1	H	8⅜	1½	16¼	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	130½	91	242	38	10
Selden 52	4	¼	1¼	1	H	11½	1½	16¾	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	114	71	198½	34	.....
Selden 53B	4	¼	1¼	1	H	8⅜	1½	16¾	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	136	82	227¾	34	.....
Selden 70B	4	¼	1½	1	H	9	1¾	16¾	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	240	161	295	52	.....
Selden 73B	4	¼	1½	1	H	7	1¾	16¾	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	136	82	244	34	.....
Selden 90B	4	¼	1½	1	H	7½	2½	14½	1½	40⅜	2	V	13	3½	¼	4	15⅝	3¾	¼	4	155	91	253 ⅛	37½	.....
Service 12–¾	3	⅜	1½	1⅛	V	13½	2	13	1¾	35½	1	F	17 11/16	4	¼	4	17 11/16	4	¼	4	155	91	.....	.....	.....
Service 25–1½	3	⅜	1½	1⅛	V	12½	2	13	1¾	37¾	1	F	10 ⅝	2½	¼	4	10 ⅝	2½	¼	4	153	89	256 ⅛	37½	.....
Service 21–1½	3	⅜	1½	1⅛	H	10	2	6	1¾	33	1¼	F	19⅜	1¾	⅜	4	19⅜	3	⅜	4	101½	54	176¾	37 ⅜	9
Service 32–2	4	¼	1½	1⅛	V	10	2	8	1¾	33	1¼	F	12	3¼	¼	4	12	3¼	¼	4	106¾	65¾	190	32	9¼
Service 37–2	4	¼	1½	1⅛	V	10	2	8	1¾	33	1¼	F	12	3¼	¼	4	12	3¼	¼	4	109½	70½	187	34	9
Service 52–3	4	¼	1½	1⅛	V	10	2	8	1¾	33	1¼	F	12	3¼	¼	4	12	3¼	¼	4	121 ⅜	81	204½	34	10½
Service 72–3½	4	¼	1½	1⅛	V	10	2	8	1¾	38¼	1½	F	13½	3¼	¼	4	13½	3¼	¼	4	121 ⅜	.....	.....	34	.....
Service 77–4	4	¼	1½	1⅛	V	10	2	10	1¾	38¼	1½	F	16	3¾	¼	4	16	3¾	¼	4	131⅛	91	214½	34	10
Service 102–6	4	¼	1½	1⅛	V	10	2	10	1¾	39¾	1½	F	18½	4	¼	4	18½	4	¼	4	150¼	104½	233¾	38	8½
Signal NF–1	3	⅜	1½	1⅛	V	7¼	1½	12	1¾	30½	1¼	F	11	3	¼	4	11	3	¼	4	145¾	100	233¾	38	8½
Signal H 1½	3	⅜	1½	1⅛	V	8	1½	12	1¾	30½	1¼	F	11¾	3½	¼	4	11¾	3½	¼	4	145⅝	100	233¾	38	10
Signal J–2½	3	⅜	1½	1⅛	V	10	1½	12	1¾	34¼	1¼	F	13⅜	3½	¼	4	13⅜	3½	¼	4	112	.....	.....	34	.....
Signal M 3½	3	¼	1½	1⅛	V	5½	2	16	2	41	2	F	15⅝	4	¼	4	15⅝	4	¼	4	120	.....	.....	34	.....
Signal R–5	3	⅜	1	1	H	8	2¼	14¾	2	39¾	1	F	13	3½	¼	4	13	3½	¼	4	126	.....	.....	34	.....
Standard 75–1¼	3	⅜	1	1	H	10½	2¼	14¾	2	39¾	1	F	15⅝	4	¼	4	15⅝	4	¼	4	168	.....	.....	38	.....
Standard 1½K–1–1½	3	⅜	1	1	H	10½	2	14¾	2	39¾	1	F	17 11/16	4	¼	4	17 11/16	4	¼	4	172	.....	.....	38	.....
Standard 2½K–2½–3	3	⅜	1	1	H	10	1⅞	16	1⅞	40⅞	1½	F	17 11/16	4	¼	4	17 11/16	4	¼	4	108	.....	198	38	9¾
Standard 3½K–3½–5	3	⅜	1	1	H	10	1⅞	16	1⅞	41½	1½	F	18⅞	4	¼	4	18⅞	4	¼	4	120	.....	210	32	9⅞
Standard 5K–5–7	3	⅜	1	1	H	8	1⅞	16	3½	42¼	1½	F	11¾	4	2½	4	11¾	4	2½	4	132	.....	220⅜	32	10
Sterling 1½	3	⅜	1	1	H	10	1½	19	1½	38	1½	F	10⅞	3	¼	4	10⅞	3	¼	4	144	.....	240	32	8¾
Sterling 2	3	⅜	1¼	1	H	10	1½	19	1½	38	1½	F	13⅞	3½	¼	4	13⅞	3½	¼	4	144	.....	244½	38	9
Sterling 2½	3	⅜	1¼	1	H	10	1½	19	1½	40½	1½	F	15⅝	4	¼	4	15⅝	4	¼	4	144	.....	244½	38	.....
Sterling 3½	3	⅜	1¼	1	H	10	1½	19	1½	40½	1½	F	17 11/16	4	¼	4	17 11/16	4	¼	4	120	70	216	38	.....
Sterling 5–Worm	3	⅜	1¼	1	H	10	1½	19	1½	40½	1½	F	11¾	3¼	¼	4	11¾	3¼	¼	4	120	70	216	33½	.....
Sterling 5–Chain E.H.D.	3	⅜	1¼	1	H	13½	1½	22	1½	40½	1½	F	13⅜	3½	¼	4	13⅜	3½	¼	4	138	84	234	33½	.....
Sterling 5–Ch. E. L. D.	3	⅜	1½	1	H	10	1½	19	1½	40½	1½	F	15¾	4	¼	4	15¾	4	¼	4	144	85	245	34	.....
Sterling 7½	3	⅜	1½	1¼	V	1	.....	.....	.....	.....	.....	.....	17 11/16	4	¼	4	17 11/16	4	¼	4	158	91	259	38	.....
Stewart M15–1	3	⅜	1¼	1¼	V	1	.....	.....	.....	.....	.....	.....	29 11/16	4	¼	4	29 11/16	4	¼	4	158	97	259	38	.....
Stewart M9–1½	3	⅜	1¼	1¼	V	1⅛	.....	.....	.....	.....	.....	.....	29 11/16	4	¼	4	29 11/16	4	¼	4	158	97	259	38	.....
Stewart M7X	3	⅜	1¼	1⅛	V	14	2½	14	2½	33	1½	F	22¾	2	½	2	22¾	2	½	2	99½	.....	.....	38	.....
Stewart M10X	3	⅜	1	1⅛	V	18	1¾	15	1¼	39⅛	1½	F	8	2	¼	2	8	2	¼	2	119¼	.....	.....	32	.....
Stoughton C–¾	4	¼	1	1⅛	V	18	1¾	15	1¼	39¼	1½	F	8	2	¼	2	8	2	¼	2	132¾	.....	.....	32	.....
Stoughton A–1	4	¼	1¼	1⅛	V	18	1¾	15	1¼	44	2	F	55	2	⅛	2	55	2	⅛	2	138	.....	.....	32	.....
Stoughton B–1½	4	¼	1¼	1⅛	V	9	1½	14	1¼	44	2	F	16¾	2	¼	2	16¾	2	¼	2	92½	57	182	34	10½
Stoughton D–2	3	¼	1¼	1⅛	V	10	2	15	1½	37½	1⅞	F	19	2	¼	2	19	2	¼	2	88	57½	181	34	11½
Stoughton F–3	3	¼	1¼	1⅛	V	19	1¾	19	1¾	37½	1⅞	F	23	2¼	¼	4	23	2¼	¼	4	116	66	210	34	11
Super Truck 50	3	¼	1¼	1⅛	V	19½	1¾	19	1¾	42	1⅞	F	23	2¼	¼	4	23	2¼	¼	4	116	70	210	34	9¾
Super Truck 70	3	¼	1½	1⅛	V	6	1¾	19	1¾	42	1⅞	F	23	2¼	¼	4	23	2¼	¼	4	127	82	222	36	9¾
Super Truck 100	3	¼	1½	1⅛	V	9	1¾	7¼	1¼	36½	2	F	51½	2¼	¼	4	51½	2¼	¼	4	135	.....	.....	36	.....
Thomart Speed	3	⅜	1¼	1⅛	V	9	1¾	7¼	1¼	36½	2	F	55½	2½	¼	4	55½	2½	¼	4	144	.....	.....	34	.....
Titan 2½	4	¼	1¼	1⅛	V	9	1¾	7¼	1¼	36½	2	F	68	3	¼	4	68	3	¼	4	144	.....	.....	34	.....
Titan 3½	4	¼	1½	1⅛	V	9	1¾	7¼	1¼	36½	2	F	19¾	1¾	⅜	4	19⅜	1¾	⅜	4	102	60⅜	195	34	10
Titan 5	3	⅜	1¼	1¼	V	9	1¾	7¼	1¼	36½	2	F	14	3½	¼	4	9	3½	¼	4	144	.....	.....	32	.....
Tower J–1½	3	⅜	1¼	1¼	V	9	1¾	7¼	1¼	36½	2	F	15	3	¼	4	14	6	¼	4	144	.....	.....	34	.....
Tower H–2½	3	⅜	1¼	1¼	V	9	1¾	7¼	1¼	36½	2	F	11¾	3½	¼	4	14	6	¼	4	135½	74½	224	32½	11½
Tower G–3½	3	⅜	1½	1½	V	7½	1¾	12	1⅝	36	1½	F	13⅞	3½	¼	4	11¾	3½	¼	4	138¾	75¾	230	32½	10½
													15⅝	3¾	¼	4	13⅞	3½	¼	4	152 11/16	90 11/16	248	37	9½
																	15⅝	3¾	¼	4					

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Traffic C-4000	3	1/4	1	1/4	H	10 1/4	2	10 1/2	2	41 1/4	1 1/4	F	43 1/2	2 1/2	1/4	2	38	1 3/4	1/4	2	120 3/4	67 3/4	213 3/4	42	10 1/4
Traffic 6000	3	1/4	1	1/4	H	10 1/2	2	10 1/2	2	41 1/4	1 1/4	F	52	3	1/4	2	47	2	1/4	2	120 3/4	69 3/4	213 3/8	34	11 3/4
Traffic Speedboy	3	1/4	1	1/4	H	10 1/2	2	10 1/2	2	41 1/4	1 1/4	F	43 1/2	2 1/2	1/4	2	38	1 3/4	1/4	2	86	53 3/8	174	34	11 3/4
Transport 15–1	3	1/4	1	1	H	10 3/4	2	13	2	40 3/8	1 1/4	F	48	2 1/2	1/4	2	46 5/8	2 1/4	1/4	2	98 1/2	57 3/8	188	34	10
Transport 26–1 1/2	4	1/4	1	1	V	9 1/4	2	13	1 1/4	34 1/4	1 3/4	F	48 1/2	2	1/4	2	46 1/2	1 1/2	1/4	2	113 7/8	70 1/4	201	34	10
Transport 36–2	4	1/4	1	1	V	10 3/4	2	16	1 1/4	33 1/2	2	F	10 1/4	3 1/2	1/4	2	46 1/2	1 1/2	1/4	2	120 1/4	72 3/4	210	34	11
Transport 61–3 1/2	4	1/4	1 1/4	1 1/4	V	9 1/4	2	16	1 1/4	33 1/2	2	F	11 7/8	3	1/4	4	48 1/2	2 1/2	1/4	2	127 3/8	78 1/8	218	34	11
Transport 75–5	4	1/4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 7/8	2	F	11 7/8	3	1/4	4	58	2 1/2	1/4	2	150 1/8	93 1/8	251 1/2	36 1/2	10 1/2
Transport 55–3	3	1/4	1 1/4	1 1/4	V	9	1 1/2	16	1 1/4	31 1/2	1 1/4	F	11 7/8	3	1/4	4	48 1/2	2 1/2	1/4	2	123 1/8	78 1/8	213 1/8	34	11
Traylor B	4	1/4	1	....	V	....	....	....	....	38	1	F	50	2	1/4	2	50	2	1/4	2	117	75	204 3/4	34	10
Traylor C	4	1/4	1 1/4	....	V	....	....	....	....	36	2	F	50	2	1/4	2	50	2	1/4	2	122	73 1/2	218 3/4	34	10 1/4
Traylor D	4	1/4	1 1/4	....	V	....	....	....	....	36	2	F	56 1/2	2 1/4	1/4	2	56 1/2	2 1/4	1/4	2	142	76	241 1/2	34	9 1/4
Traylor F	4	1/4	1 1/4	....	V	....	....	....	....	37	2	F	59	2 1/2	....	2	59	2 1/2	....	2	165	92 1/2	273 1/4	35	11
Triangle AA–1	3	1/4	1	1	H	17	2	17	2	34	1	F	22 1/2	1 1/4	1/4	4	48	2 1/2	1/4	2	94	53	177	35	10
Triangle A–1 1/2	4	1/4	1	1	V	14	1 1/4	14 1/2	1 1/4	39 1/4	1 1/2	F	7 1/2	4	1/4	2	49	2	1/4	2	126	77 1/2	225	34	12
Triangle B 2 1/2	3	1/4	1 1/4	1 1/4	V	9	1 1/2	18	1 1/4	39 1/4	1 1/2	F	7 1/2	4	1/4	2	52	3	1/4	2	132	84 1/2	217 1/4	34	9
Triangle C–2	3	1/4	1	1	V	14	1 1/4	14 1/2	1 1/4	39 1/4	1 1/2	F	7 1/2	4	1/4	2	52	3	1/4	2	129	81	219 1/8	34	12
Ultimate A–2	4	1/4	1 1/4	1 5/8	V	11	2	8	1 1/4	34	2	F	20	2 1/4	1/4	2	45	2	1/4	2	126	.....	.....	32 3/4	.....
Ultimate AJ2	4	1/4	1 1/4	1 5/8	V	11	2	8	1 1/4	34	2	F	20	2 1/4	1/4	2	45	2	1/4	2	126	.....	.....	32 3/4	.....
Ultimate AJL–2	4	1/4	1 1/4	1 5/8	V	11	2	8	1 1/4	34	2	F	20	2 1/4	1/4	2	45	2	1/4	2	150	.....	.....	32 3/4	.....
Ultimate AJXL	4	1/4	1 1/4	1 5/8	V	12	2	8	1 1/4	34	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ultimate B–3	4	1/4	1 1/4	1 5/8	V	11	2	8	1 1/4	34	2	F	51	2 1/2	1/4	2	51	2 1/4	1/4	2	144	.....	.....	32 3/4	.....
Ultimate BL3	4	1/4	1 1/4	1 5/8	V	11	2	8	1 1/4	34	2	F	51	2 1/4	1/4	2	51	2 1/4	1/4	2	192	.....	.....	32 3/4	.....
Ultimate D–5	4	1/4	1 1/4	1 5/8	V	11	2	8	1 1/4	34	2	F	51	2 1/4	1/4	2	51	2 1/4	1/4	2	180	.....	.....	37 1/2	.....
Union FW–2 1/2	3	1/4	1 1/4	1 1/4	V	20	1 3/4	19 1/2	1 1/2	37 3/4	2	F	26	4 1/2	1/4	1	52	3	1/4	1	133 1/2	77 3/4	224	32	11 1/2
Union H–4	3	1/4	1 1/4	1 1/4	V	20	1 3/4	19 1/2	1 1/2	37 3/4	2	F	56 3/4	3 1/2	1/4	1	32	4 1/2	1/4	1	157 1/2	.....	.....	34	.....
Union HW–4	3	1/4	1 1/4	1 1/4	V	20	1 3/4	19 1/2	1 1/2	37 3/4	2	F	26	4 1/4	1/4	1	24	4	1/4	2	157 1/2	98	264	34	13 1/2
United H Spec	4	1/4	1	1	H	16	2	19	2	32	1 1/4	F	49	2 1/2	1/4	2	49	2 1/2	1/4	2	.....	.....	.....	.....	.....
United 30, 35, 50	3	1/4	1 1/4	1 1/4	H	7	1 3/4	13	1 1/4	34	1 1/2	F	49	2 1/2	1/4	2	49	2 1/2	1/4	2	.....	.....	.....	.....	.....
United C	4	1/4	1 1/4	1 11/16	H	7	2 1/2	7	2 1/2	37 1/4	2	F	62	3	1/4	1	58	2 1/2	1/4	1	.....	.....	.....	.....	.....
United 1 1/2	4	1/4	1	1 11/16	H	15	2 1/2	16	1 1/2	37 1/2	2	F	48	2	1/4	1	48	1 1/2	1/4	1	120	.....	.....	33	.....
United 2 1/2	4	1/4	1 1/4	1 11/16	H	7	2 1/2	12	1 1/2	37 1/2	2	F	49	3	1/4	1	49	2 1/2	1/4	1	Opt	.....	.....	33	.....
United 3 1/2	4	1/4	1 1/4	1 11/16	H	7	2 1/2	7	1 1/2	37 1/2	2	F	62	3	1/4	1	58	2 1/2	1/4	1	Opt	.....	.....	34	.....
U.S.U.–1 1/2	4	1/4	1	1/8	V	11 1/2	1 3/4	11 1/2	1 1/4	33	1 1/4	F	50 1/2	2 1/2	1/4	2	20	1 1/2	1/4	4	108	70	195	32	9 1/4
U.S.N.–1 1/2	3	M	1	1/8	H	11 1/2	2	9	1 1/4	37	1 1/4	F	50 1/2	2 1/2	1/4	2	46 1/2	1 1/2	1/4	4	120	82	211	34	11
U.S.N.W.–23–1 1/2–2	4	1/4	1	1/8	H	10 3/4	1 3/4	11 1/2	1 1/4	33	1 1/4	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	120	82	211	34	11
U.S.R.–2 1/2–3	3	1/4	1 1/4	1/8	V	10	1 1/4	10	1 1/4	35	1 1/4	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	144	94	241	34	9 1/4
U.S.S.–3 1/2–4	3	1/4	1 1/4	1/4	V	9	1 1/2	8	1 1/2	37	1 1/4	F	50	2 1/2	1/4	2	50	2 1/2	1/4	2	156	104	258	36	9
U.S.T. 5–7	4	1/4	1 1/2	1/4	V	15	2	13	1 1/2	38 3/4	2	F	62	3	1/4	4	33	4	1/4	1	168	103	278	36	10 1/2
U.S.S.Spec. 4–5	3	1/4	1 1/4	1/4	V	9	1 1/2	8	1 1/2	37	1 1/4	F	21	4	1/4	4	21	3	1/4	4	156	.....	.....	36	.....
Vim 50–1 1/2–3/4	3	....	1	....	....	....	....	....	....	33 1/8	....	F	48	....	....	2	46 5/8	....	....	2	.....	.....	160	.....	.....
Walker 15	....	....	....	....	....	....	....	....	....	....	....	...	45 1/2	2 1/2	....	2	16	2	1/4	4	90	.....	.....	32	.....
Walker P3 1/2	....	....	....	....	....	....	....	....	....	....	....	...	53 1/4	3	1/4	2	19 1/4	2 1/2	1/4	4	140	.....	.....	35	.....
Walker N5	....	....	....	....	....	....	....	....	....	....	....	...	53 1/4	3	1/4	2	19 1/4	2 1/2	1/4	4	162	.....	.....	35	.....
Walker 22	....	....	....	....	....	....	....	....	....	....	....	...	45 1/2	2 1/2	1/4	2	16	2	1/4	4	99	.....	.....	32	.....
Walker 42	....	....	....	....	....	....	....	....	....	....	....	...	53 1/4	3	1/4	2	19 1/4	2 1/2	1/4	4	120	.....	.....	32	.....
Walker Johnson A–2	3	1/4	1	1	V	11 1/2	2	7 1/2	1 1/4	37	1	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	117	.....	.....	32	.....
Walker Johnson B3	4	1/4	1 1/4	1 1/4	V	10	2	8	1 1/4	33 1/2	1 1/4	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	133	.....	.....	32 1/16	.....
Walter 8–5	3	1/4	1/2	2	V	10	1 1/2	18	1 1/2	39	1 1/2	F	15	5	1/4	4	57	2 1/2	1/4	2	150	.....	.....	36	.....
Ward LaFr'e 2B–2 1/2–3 1/2	3	1/4	1 1/4	1 1/2	V	7	1 1/2	16	1 1/2	41 1/2	1 1/2	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	137 1/2	.....	.....	33	.....
Ward LaFrance 4A–3 1/2–5	3	1/4	1 3/4	1 3/4	V	8 1/2	1 1/2	18	1 1/2	41 1/2	1 1/2	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	4	170 11/16	.....	.....	37	.....
Ward LaFrance 5A–5–7	3	1/4	1 1/2	1 3/4	V	9 1/4	1 1/2	18	1 1/2	41 1/2	1 1/2	F	18	4	1/4	4	18	4	1/4	4	170 11/16	.....	.....	37	.....
Watson D-1	3	1/4	1	1 3/8	V	12 1/2	1 3/8	12	1 1/4	40	1 1/4	F	10 11/16	2 1/2	1/4	4	10 11/16	2 1/2	1/4	4	99	60	186	30 1/8	11
Watson N–3 1/2	3	1/4	1 1/4	1 1/2	V	16 1/2	1 1/4	3	1 1/4	34	1 1/4	F	62	2 1/2	1/4	2	47	2 1/2	1/4	2	147	.....	.....	37	.....
Watson U–5	3	1/4	1 1/4	1 1/2	V	16 1/2	1 1/4	3	1 1/4	38 1/2	1 1/4	F	15 1/2	3 1/4	1/4	4	15 1/2	3 3/4	1/4	4	.....	.....	.....	36	.....
White 15A–Taxi	3	1/4	1 11/16	1 11/16	V	7 3/4	1	6 1/2	1 1/4	38	1 1/4	F	46	2 1/2	1/4	2	41 1/4	2 1/2	1/4	2	55 1/4	43 1/2	149 1/4	34	8 1/8
White 15–¾	3	1/4	1 11/16	1 11/16	V	7 1/4	1	6 1/2	1 1/4	38	1 1/4	F	46	2 1/2	1/4	2	41 1/4	2 1/2	1/4	2	85 1/2	58	179	34	10 3/8
White 15, 45. ¾	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	40 5/8	2	F	53 7/8	2 1/2	1/4	2	50 7/8	2 1/2	1/4	2	85 3/8	57 7/8	189	34	10 3/8
White 20–2	3	1/4	1 11/16	1 11/16	V	7 1/4	1	7 1/4	1 1/4	38	1 1/4	F	55 1/2	3 1/2	1/4	2	50 7/8	3 1/2	1/4	2	146	92 1/2	239 1/2	34	9 11/16
White 20, D–2	3	1/4	1 11/16	1 11/16	V	7 1/4	1	7 1/4	1 1/4	38	1 1/4	F	55 1/2	3 1/2	1/4	2	50 7/8	3 1/2	1/4	2	98	70	191 1/2	34	9 11/16
White 20, 45–2	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	40 5/8	2	F	11 3/8	4	1/4	4	50 7/8	3 1/2	1/4	2	107 1/2	82	214 1/4	34	9 11/16
White 50–Bus	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	45 3/4	2	F	11 3/8	4	1/4	4	50 11/16	3 1/2	1/4	2	168	112	274 3/4	74	9 11/16
White 40–3 1/2	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	45 3/4	2	F	11 3/8	4	1/4	4	25 7/8	5	1/4	4	164	106 1/2	267 1/2	42 1/2	10 3/4
White 40D–3 1/2	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	45 3/4	2	F	11 3/8	4	1/4	4	25 7/8	5	1/4	4	118	88 1/2	222 1/2	42 1/2	10 3/4
White 45–5	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	45 3/4	2	F	11 3/8	5	1/4	4	25 7/8	5	1/4	4	164	106 1/2	267 1/2	42 1/2	11
White4 5D–5	3	1/4	1 11/16	1 11/16	V	13 1/2	1 1/2	12	1 1/2	45 3/4	2	F	11 3/8	5	1/4	4	25 7/8	5	1/4	4	119	88 1/2	222 1/2	42 1/2	11
Wilcox AA–1	3	1/4	1	....	....	....	....	....	....	....	....	...	47 1/4	2 1/2	1/4	2	33 1/4	2 1/2	1/4	2	96	.....	.....	34	.....
Wilcox B–1 1/2	3	1/4	1 1/4	....	....	....	....	....	....	....	....	...	47 1/4	2 1/2	1/4	2	33 1/4	2 1/2	1/4	2	132	.....	.....	33	.....
Wilcox C–2 1/2	3	1/4	1 1/4	....	....	....	....	....	....	....	....	...	57 1/2	2 1/2	1/4	2	42 1/2	2 1/2	1/4	2	141	.....	.....	33	.....
Wilcox E–3 1/2	3	1/4	1 1/4	....	....	....	....	....	....	....	....	...	57 1/2	2 1/2	1/4	2	42 1/2	2 1/2	1/4	2	156	.....	.....	33	.....
Wilcox F–5	3	1/4	1 1/2	....	....	....	....	....	....	....	....	...	69 3/8	3 1/2	1/4	2	52	3 1/2	1/4	2	148 1/2	.....	.....	36	.....
Wilson 1 1/2	4	1/4	....	1	....	....	....	....	....	....	1 1/4	...	39 1/2	1 3/4	1/4	2	39 1/2	1 3/4	1/4	2	132	72	229	33	10 1/2
Wilson 2 1/2	4	1/4	....	1 1/4	....	....	....	....	....	....	1 1/4	...	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	144	90	229	33	9 1/2
Wilson 3 1/2	4	1/4	....	1 1/2	....	....	....	....	....	....	1 1/2	...	16	3 3/4	1/4	4	16	3 3/4	1/4	4	156	95	245	37	9 1/2
Wilson 5	4	1/4	....	1 1/2	....	....	....	....	....	....	1 1/2	...	18	4	1/4	4	18	4	1/4	4	156	95	245	37	10 1/4
Wichita K–1	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	19 1/2	2	1/4	4	19 1/2	2	1/4	4	127 1/2	.....	.....	32	.....
Wichita L–1 1/2	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	49	2	1/4	2	49	2	1/4	2	127 1/2	.....	.....	30	.....
Wichita M–2	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	49	2	1/4	2	49	2	1/4	2	126 1/2	.....	.....	30	.....
Wichita R–2 1/2	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	54	2 1/4	1/4	2	54	2 1/4	1/4	2	126 1/2	.....	.....	30	.....
Wichita RX–2 1/2	3	1/4	1 1/4	1 3/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	54	2 1/4	1/4	2	54	2 1/4	1/4	2	130	.....	.....	30	.....
Wichita O–3 1/2	3	1/4	1 1/2	1 3/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	56 1/2	2 1/2	1/4	2	56 1/2	2 1/2	1/4	2	152 1/2	.....	.....	30	.....
Wichita S–5	3	1/4	1 1/2	1 3/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	66	3	1/4	2	66	3	1/4	2	163 1/2	.....	.....	36	.....
Winter & Hirsch K–2 1/2	4	1/4	1 9/16	1 1/2	V	12	1 1/2	14	1 1/2	48	1 1/2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	144	96	252	32	9
Winter & Hirsch L–3 1/2	4	1/4	1 9/16	1 1/2	V	12	1 1/2	14	1 1/2	48	1 1/2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	196	118	288	36	9
Winther 751–1	3	1/4	1	....	H	15 3/4	2	17	2	36 11/16	1	F	42	2	1/4	2	24	2	1/4	1	102	.....	.....	30	12 1/2
Winther 39–1 1/2	3	1/4	1 1/4	....	V	10	1 3/4	4 3/8	1 1/2	33 1/4	1 1/4	F	50	2 1/4	1/4	2	22 1/2	2 1/4	1/4	1	120	.....	.....	30	12
Winther 430–1 1/2	3	1/4	1 1/4	....	V	11 1/4	1 1/2	11 1/2	1 1/4	30 5/8	1 1/2	F	50	2 1/4	1/4	2	22 1/2	2 1/4	1/4	1	120	.....	.....	30	12
Winther 450 2 1/2	3	1/4	1 1/4	....	V	11 1/2	1 1/2	6 1/2	1 1/2	37 1/2	1 1/4	F	52	3	1/4	2	22 1/2	2 1/4	1/4	2	120	.....	.....	30	13
Winther 51–2 1/2	3	1/4	1 1/4	....	V	17 7/8	1 3/4	8	1 1/2	42 1/2	2	F	52	3	1/4	2	50	2 1/4	1/4	2	144	.....	.....	33	14
Winther 70–3 1/2	3	1/4	1 1/4	....	V	17 7/8	1 3/4	8	1 1/2	42 1/2	2	F	62	3	1/4	2	60	2 1/2	1/4	2	156	.....	.....	33	14
Winther 109–5	3	1/4	1 1/2	....	V	21 1/2	1 3/4	8	1 1/2	42 1/2	2	F	93	2 1/4	1/4	2	93	2 1/4	1/4	2	156	.....	.....	33	10
Winther 140–7	3	1/4	1 1/2	....	V	12	1 3/4	6	1 3/4	42 1/4	2	F	93	2 1/4	1/4	2	93	2 1/4	1/4	2	156	.....	.....	34	10
Wisconsin 2 (Loganville)	3	1/4	1 1/4	1 1/4	H	17	2	17	2	34	1/4	F	58	2 1/2	1/4	2	56 1/2	2 1/4	1/4	2	114	.....	.....	34	.....
Wisconsin 2 1/2 (Loganville)	3	1/4	1 1/4	1 1/4	V	12	1 1/2	10	1 1/4	40	3/4	V	58	2 1/2	1/4	2	56 1/2	2 1/4	1/4	2	120	.....	.....	32	.....
Witt-Will P–2	3	1/4	1 1/4	1 1/4	V	8	1 1/2	12	1 1/4	31	1 1/4	F	48	3 1/4	1/4	4	48	3 1/4	1/4	4	.....	78	223	32	10
Witt-Will S–3	3	1/4	1 1/4	1 1/4	V	8	1 1/2	12	1 1/4	41	1 1/2	F	52	3 1/2	1/4	4	52	3 1/2	1/4	4	156	108	242	32	10
Witt-Will N–1 1/2	3	1/4	1 1/4	1 1/4	V	8	1 1/2	12	1 1/4	31	1 1/4	F	48	3 1/4	1/4	4	48	3 1/4	1/4	4	137	78	226	32	10
Witt-Will S–2 1/2	3	1/4	1 1/4	1 1/4	V	8	1 1/2	12	1 1/4	41	1 1/2	F	52	3 1/2	1/4	4	52	3 1/2	1/4	4	137	78	226	32	10
Yellow Cab M22—¾	3	1/4	1	1 1/2	V	7 1/2	2	9 5/8	2	38 1/2	5/8	V	49	2 1/2	1/4	2	45	2 1/2	1/4	2	60	.....	.....	43	.....
Yellow Cab M42–1 1/4	3	1/4	1	1 1/2	V	7 1/2	2	9 5/8	2	38 1/2	5/8	V	11	3	1/4	4	11	3	1/4	4	92	.....	.....	32	.....

KEY OF ABBREVIATIONS

Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Page Following. In All Specifications—O, Own; Op or Opt, Optional

Engine:

Beav—Beaver
Buda
Cont—Continental
GBS—Golden, Belknap & Swartz
Gr-B—Gray-Beal
Her—Hercules
Hin—Hinkley
1 H-Sp—Herschell-Spillman
LeR—Le Roi
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Sup—Supreme
Wau—Waukesha
Wei—Weidely
Wis—Wisconsin

Valve Arrangement:

H—Overhead
2 L—ELL-Head
S—Sleeve
T—TEE-Head

Radiator (Make):

BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
Idl—Ideal
3 Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
SJ—Shotwell Johnson
Spar—Sparton
Spec—Special
Spli—Splitex
Stn—Standard
Whe—Wheeler

Lubrication:

4 FS—Force and Splash
F—Force Feed
S—Splash

Carburetor:

Bent—Bennett
Cart—Carter
Eag—Eagle
Ens—Ensign
Hol—Holly
John—Johnson
King—Kingston
5 Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

Fuel Feed:

6 G—Gravity
P—Pressure
V—Vacuum

Governor:

Con—Continental
Dup—Duplex
Han—Handy
Her—Hercules
7 Hin—Hinkley
McC—McCanna
Mon—Monarch
Phar—Pharo
Pier—Pierce
Sim—Simplex
Wau—Waukesha

Ignition System:

Amr—American Swiss
Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Ber—Berling
Bos—Bosch
Con—Connecticut
Del—Delco
Eis—Eisemann
Kin—Kingston
8 KW—K. W. Ignition Co.
Lor—Louraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
RBo—Robert Bosch
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

Engine Starter:

AC—Allis-Chalmers
AK—Atwater Kent
AuL—Auto-Lite
Bj—Bijur
Bos—Bosch
Del—Delco
Dy—Dyneto
9 GD—Gray & Davis
LN—Leece-Neville
NE—North East
Rm—Remy
Sim—Simms
USL—U. S. L.
Wes—Westinghouse
Wg—Wagner

Clutch (Make):

B.B—Borg & Beck
B-Li—Brown-Lipe
Covt—Covert
Det—Detlaff
DG—Detroit Gear & Mach.
Dod—Dodge
Full—Fuller
10 Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Mun—Muncie
T-D—Twin Disc
W-Gr—Warner Gear

Gearset:

B-Li—Brown-Lipe
Cott—Cotta
Covt—Covert
11 Det—Detroit
Dod—Dodge
Dun—Dundore
Durs—Durston
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Mun—Muncie
W-C—Warner Corporation
W-Gr—Warner Gear

Location of Gearset:

A—Amidships
J—Unit with jackshaft
12 R—Rear
U—Unit with engine

Universal:

Acm—Acme
Arv—Arvac
Bld—Blood-Brothers
Det—Detroit
Hart—Hartford
KB—Kinsler-Bennett
MM—Mechanics
M-E—Merchant & Evans
Nor—Norwalk
Pet—Cleveland Universal
13 Pick—Pick
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

Springs:

Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans
Cham—Champion
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
IC—Iron City
Kal—Kalamazoo
Lah—Laher
Lig—Liggett
Mar—Maremont
14 Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
P.S.—Point Spring Co.
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
SS—Standard Steel
Ster—Sterling
Tut—Tuthill
US—United States
Vul—Jenkins Vulcan

Front Axle

Col—Columbia
Cont—Continental
Dod—Dodge
Fli—Flint
Sals—Salisbury
15 Sav—Savage
Shel—Sheldon
Shul—Shuler
Stan—Stan-Par
Tim—Timken
Torb—Torbensen
Vul—Vulcan

Final Drive:

B—Bevel Gear
C—Chain
I—Internal Gear
16 P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

Rear Axle (Make):

Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton
Fli—Flint
Huck—Huck
IrM—Iron Mt.
LM—L M Axle
17 Russ—Russel
Sals—Salisbury
Shel—Sheldon
Stn—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbensen
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

Rear Axle (Type):

F—Floating
D—Dead
18 ½—Semi-Floating
¾—¾-Floating

Steering Gear:

CAS—C. A. S. Products Co.
Dit—Ditwiler
Dod—Dodge
Gem—Gemmer
Hin—Keystone Hindley
Jac—Jacox
19 Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
Woh—Wohlrab

Wheels:

Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Bet—Bethlehem
Bud—Budd
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
Dis—Disteel
E&O—Eberly & Oris
Hay—Hayes
Hoo—Hoopes Brothers
Imp—Imperial
Ind—Indestructible
Jon—Jones
Kel—Kelsey
20 MM—Michigan Malleable Iron Co.
Mot—Motor Wheel
Mun—Muncie Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Van—Van Wheel
Wal—Walker
Way—Wayne
W-L—Waterhouse & Lester

Rim Equipment:

Bak—Baker
Cle—Cleveland
Det—Detroit
Fir—Firestone
21 Gdy—Goodyear
Hay—Hayes
Jac—Jackson
Jax—Jaxon
Kel—Kelsey
Mil—Miller

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Preceding Table for Replacement Data. Truck Frame Dimensions Are Included in Same Table

(Where prices are not given it is because we have been unable to get them from authoritative sources)

* This symbol in the wheelbase column indicates that more than one wheelbase is furnished

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
	1				2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
1000 Pounds																															
Chevrolet, Sup. LD	395	Own	3 11/16x4	21.7	...	Har	FS	Zen	G	.....	Rm	Rm	Own	.....	U	3	Own	SS	.....	S	.....	1/2	3.77	12.52	M-P	30x3 1/2	30x3 1/2	Hay	Jax	1390	103
Dort	685	Lyco K	3 1/2x5	19.6	L	Fed	S	Cart	V	.....	Con	Bos	Own	Own	U	3	MM	Lig	Fli 2FA 803	S	Fli 2FA 105	3/4	4.66	15.13	Sag	31x4*	31x4*	Hay	Jac	2015	106
Overland	425	Own	3 1/8x4	18.2	L	Own	FS	Till	G	.....	AuL	AuL	B.B.	Own	U	3	Own	Own	Own	B	Own	1/2	4.5	17.68	Own	30x3 1/2	30x3 1/2	Hay	Hay	1550	100
1500 Pounds																															
American LaFrance 1R	....	Own	4 1/4x5	28.9	L	Bus	F	Strm	G	.....	Spl	Wes	Own	Own	A	3	Own	Mer	Own	S	Own	1/2	4.5	20.1	Own	33x5*	33x5*	.....	Fir	.....	139 1/2
Buick	....	Own SD-4	3 3/4x4 3/4	18.2	...	Own	FS	Mar	V	.....	Del	Del	Own	Own	U	3	Own	Opt	.....	S	Own	3/4	4.66	13.05	Jac	31x4	31x4	.....	Jac	2030	109
Chevrolet Sup. Util. Exp.	495	Own	3 11/16x4	21.7	H	Har	FS	Zen	G	.....	Rm	Rm	Own	.....	...	3	Own	SS	.....	S	.....	1/2	5.42	18	M-P	31x4*	34x4 1/2*	Hay	Jax	2840	125
Commerce 9	....	Cont N	3 3/4x5	22.5	L	Lng	S	Zen	V	.....	Bos	Bj	DG	Det	U	3	UM	Am	.....	B	Sals	3/4	5.73	18.33	Jac	33x5	33x5	Mot	.....	3100	127
Corbitt S Speed Truck	....	H-Sp 30	3 1/2x5	19.8	L	Own	FS	Strm	V	.....	Eis	Dy	B-Li	B-Li 30	U	3	Hart	Shel	Shel 33FA500	W	Shel W1002	1/2	6	20	Ros	34x4 1/2*	34x4 1/2*	Bim	Fir	3420	130
Dodge Brothers	730	Own	3 7/8x4 1/2	24	L	McC	FS	Stew	V	.....	NE	NE	Own	Own	U	3	Own	Own	Own	S	Own	1/2	4.9	18.9	Own	32x4*	32x4*	Kel	Kel	2212	116
Ogden A2	....	Cont N	3 1/2x5	19.6	L	Chic	FS	Zen	V	.....	Spl	.....	B-Li	B-Li 30	U	3	M-E	Tut	Tim 1250	W	Tim 6250	1/2	6.2	.....	Ros	34x5	34x5	Stn	.....	3100	125
Perfection A	1245	Cont N	3 1/2x5	19.6	L	Own	FS	Zen	V	.....	Rm	Rm	B.B.	Own AAU	U	3	Ther	Own	Tim 1216-B	B	Tim 5311	1/2	5	22.3	Lav	32x4 1/2	32x4 1/2	Bim	Mil	2500	128
Rainier R-31	1970	Cont N	3 3/4x5	22.5	L	Har	FS	Zen	V	Mon	Eis	.....	B-Li	B-Li 30	U	3	Hart	Per	Tim 1250	W	Tim 6250	1/2	6.75	22.5	Lav	35x5*	35x5*	Jon	Fir	2500	125
Ruggles 15	895	H-Sp. 30	3 1/2x5	19.6	L	Per	FS	Zen	G	.....	Bos	Bos	M-E	Full J	U	3	M-E	Det	Col 3000	B	Col 30000	3/4	5.81	19.7	Jac	32x4 1/2	32x4 1/2	Nor	Fir	2300	122
Service 12	....	Mid 409	3 1/4x4 1/2	16.9	H	Lng	F	Strm	G	.....	Rm	Rm	Hoos	Det DY 208	U	3	M-E	Shel	Own E-1-558	B	Tim 5311	1/2	6.88	22.1	Ros	32x4 1/2*	32x4 1/2*	Bim	Fir	2720	128
Stoughton C	1175	.....	.....	.....	H	Chic	F	Zen	V	.....	Rm	Rm	Det	Own D-21	U	3	Ther	Own	Col 5058	S	Col 52003	3/4	5.87	20	Ros	34x4 1/2*	34x4 1/2*	Bim	Gdy	2480	131
Vim 50	995	Own	4 x5	25.6	L	McC	F	Zen	G	.....	Wes	Wes	Own	Own	U	3	MM	Shel	Own	B	Own	...	4.7	.....	Own	32x4*	32x4*	.....	Fir	2600	108
White 15	2400	Own GK	3 3/4x5 1/8	22.5	L	.....	FS	Zen	G	.....	.....	.....	Own	Own TBC	A	4	Own	.....	Own	B	Own	1/2	3.99	18.6	Own	34x5*	34x5*	.....	Fir	3225	133
Yellow Cab..M-22-3/4	1590	Cont V-4	3 3/4x5	22.5	L	Lng	FS	Zen	G	.....	Bos	.....	B-Li	.....	U	3	Spic	Math	.....	B	.....	...	4.9	16.31	Gem	33x4 1/2*	33x4 1/2*	Stn	Fir	2400	117
1 Ton																															
Acme 20	....	Cont N	3 3/4x5	22.5	L	GO	FS	Rayf	V	Dup	Eis	Bos	B.B.	Cott AAU	U	3	Bld	Det	Tim 1250	W	Tim 6250	1/2	6.75	27	Ros	35x5*	35x5*	Bim	.....	3050	129
Autocar F	2200	Own 2	4 3/4x4 1/2	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3800	97
Autocar G	2300	Own 2	4 3/4x4 1/2	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3900	120
Avery	....	Own 6	3 x4	21.6	L	Own	S	Strm	V	Own	KW	Wis	Own	Own	U	3	Pet	Math	Own	I	Own 2-L	D	8	26.66	Ros	34x5*	34x5*	StM	Gdy	2800	129
Bell M	1495	Buda MU	3 5/8x5 1/8	21	L	Chic	F	Zen	V	.....	Eis	.....	B.B.	.....	U	3	Spic	Det	.....	W	.....	...	7.2	.....	Lav	35x5	35x5	Bim	Fir	2500	126
Belmont B	1525	Buda MU	3 5/8x5 1/8	21	L	R-T	F	Zen	V	.....	Con	Dy	Full	Full	U	3	M-E	Math	Shel 510	B	Torb A	1/2	5.42	15.25	Lav	35x5*	35x5*	Sim	Fir	2000	113
Bessemer G	1450	Cont N	3 1/2x5	19.6	L	Stn	FS	Strm	G	.....	Bos	B	Full	Full TU 3/4	U	3	Bld	Per	Shel 350	I	Torb A	D	.....	.....	Ros	35x5	35x5	Sch	Fir	3000	124
Bethlehem KN	1385	Own	3 1/2x5	19.6	L	GO	F	Zen	V	.....	Bos	GD	B.B.	Det Dy	U	3	Spic	Math	Stan 3070F	B	Eat 1000	1/2	6.86	18.8	Ros	35x5	35x5	.....	Fir	2650	125
Bets	1850	J-3	3 3/4x5 1/8	22.3	L	Chic	F	Zen	G	Mon	Bos	Bos	B-Li	B-Li 30	U	3	Pet	Mar	Tim 1250	W	Tim 6352	1/2	.....	.....	Ros	34x5	34x5	.....	Fir	3150	140
Brockway E	....	Wis SU	4 x5	25.6	H	GO	F	Zen	V	.....	Bos	LN	B-Li	B-Li 30	U	3	M-E	Row	Col 5045	S	Col 52001	F	5.13	20.5	Gem	33x5*	33x5*	.....	Fir	3450	135
Casco Model A	1785	Buda WTU	3 3/4x5 1/8	22.4	L	GO	F	Zen	V	.....	Bos	Bos	Full	Full SUI	U	3	Spic	Stan	Col 5000	S	Col 52000	1/2	5.85	23.46	Woh	34x5	34x5	Arc	Fir	3100	130
Corbitt E-22	....	Cont N	3 3/4x5	22.5	L	McC	FS	Strm	V	.....	Eis	.....	B-Li	B-Li 30	U	3	Hart	Shel	Shel 33FA500	W	Shel W-1002	1/2	6	20	Ros	34x3 1/2	34x4	Bim	Fir	3730	130
Diehl A	....	Cont N	3 1/2x5	19.6	L	.....	FS	Zen	G	.....	Sim	.....	B.B.	Durs O2800	...	3	KB	Mar	Sals 1455E	I	Torb OX2L	D	5.3	.....	Ros	34x4 1/2*	35x5*	Sch	Fir	2400	115
D-Olt A-1	1695	H-Sp 7000	3 1/2x5	19.6	L	.....	FS	Zen	V	Opt	RBo	.....	B-Li	B-Li 30	U	3	Spic	SP	Tim 1250	W	Tim 6250	1/2	6.75	22	Ros	35x5	35x5	Day	Fir	3400	148
Dorris K-2	2490	Own	4 x5 1/2	25.6	H	Mod	F	Strm	V	.....	Bos	Wes	Own	W-Gr	U	3	Spic	Row	Tim 1250	B	Tim 5542	1/2	4.23	15.65	Ros	33x5	33x5	Mun	.....	2000	Op
Duplex D	....	Buda WTU	3 3/4x5 1/8	22.5	L	Mod	F	Zen	V	.....	Wes	Wes	B-Li	B-Li	U	3	Pet	Pen	.....	B	Tim	1/2	5.5	22	Woh	33x5*	33x5	Mot	Fir	3000	132
Eugol	1795	Buda WTU	3 3/4x5 3/8	22.5	L	Chic	F	Strm	V	.....	Wes	Wis	W-Gr	.....	U	3	Pet	Math	.....	W	.....	1/2	6.25	30.3	Ros	34x5*	34x5*	Bim	Fir	3500	135
Federal R-2	....	Cont J-4	3 3/4x5	22.5	L	Own	F	Zen	V	.....	Eis	Rm	B.B.	Det	U	3	Pet	.....	Tim 1250	W	Tim 6250	1/2	5.6	17.4	Gem	33x5	33x5†	.....	.....	2950	132
Ford T	380	Own	3 3/4x4	22.5	L	Own	S	.....	G	.....	Own	.....	Own	Own	U	2	Own	Own	Own	W	Own	1/2	Op	19.9	Own	30x3 1/2*	32x4 1/2	.....	.....	1520	124
Fulton A	1495	H-Sp 7000	3 1/2x5	19.6	L	Liv	FS	Cart	G	.....	Sim	Wis	B.B.	Durs O2500B	U	3	Spic	Row	Col 5038	B	Col 51002	...	6.8	.....	Lav	35x5	35x5	Hoo	Fir	2800	130
Garford 15	1590	Buda MU	3 5/8x5 1/8	21	L	Lng	F	Strm	G	.....	AtK	AtK	.....	Own	U	3	Spic	Per	Own	W	Stn	1/2	6.5	.....	Gem	34x5*	34x5	.....	Fir	3500	132
Gary F	1775	Buda WU	3 3/4x5 1/8	22.5	L	Chic	FS	Zen	V	Pier	Eis	.....	Full	Full	U	3	Bld	Det	Tim 1452	W	Tim 6352	1/2	8.25	24.75	Ros	36x3 1/2	36x4	Pru	Gdy	3400	130
G.M.C. K-16	....	Own	3 1/2x5 1/2	19.6	L	Own	F	Mar	G	Own	Sim	Own	Own	Own	U	3	UM	Det	Own	B	Own	3/4	6	21.9	Own	34x5*	34x5*	Kel	.....	3250	132
Gotfredson	1685	Buda WTU	3 3/4x5 1/8	22.5	L	McC	F	Zen	V	.....	Bos	AtK	B-Li	B-Li 30	U	3	Spi	Am	Tim 1250	W	Tim 6250	1/2	5.6	22.4	Gem	34x5*	34x5*	Day	Fir	3250	131
Graham Brothers B	1265	Dodge	3 7/8x4 1/2	24	L	McC	FS	Stew	V	.....	NE	NE	Dod	Dod	U	3	UP	Det	Dod	S	Own B-360	1/2	6.28	29.29	Dod	33x4 1/2*	34x5*	.....	.....	2550	140
Gramm-Pioneer 10-SpT	1365	Lyco CT	3 3/4x5	22.5	L	Own	F	Zen	G	.....	Con	AuL	Mun	.....	U	3	Own	Per	Sals	B	Sals 1483	3/4	5.75	23	Ros	33x5*	33x5*	Day	Fir	2370	129
Hal-Fur D	2000	Hin HA 400	4 x5 1/2	25.6	L	GO	F	Zen	V	Hin	Bos	Wis	B.B.	B-Li 35	A	4	Pet	Per	Tim 1452	W	Tim 6352	1/2	5.5	24	Gem	35x5*	36x6	Stn	Fir	3400	Op
Hawkeye	1550	Buda WTU	3 3/4x5 1/8	22.5	L	.....	F	Zen	G	.....	Eis	.....	Full	.....	U	3	.....	Det	.....	B	Clark	D	6.25	18.75	Ros	34x5*	34x5*	Day	Fir	3250	136
Independent B (Iowa)	1665	Cont N	3 1/2x5	19.6	L	GC	FS	Strm	V	.....	Bos	.....	Full	.....	U	3	Bld	GC	.....	...	.....	D	.....	.....	Lav	34x3	34x4	StM	Fir	3480	135
Indiana Highway Exp.	....	Wau BUX	3 3/4x5 1/4	22.5	L	Fed	F	Zen	G	.....	Bos	Bos	B.B.	B-Li 30	U	3	Pet	Shel	Tim 1250	B	Tim 5511	1/2	6.11	24.9	Ros	34x5*	34x5*	.....	Fir	3200	130
Int'n'l Speed Truck S	....	Lyco-Int'l	3 1/2x5	19.6	L	Lng	FS	Ens	G	.....	Con	AuL	Mun	.....	U	3	Sned	Stan	.....	I	.....	D	6.3	25.2	CAS	.....	.....	Opt	.....	2750	124
International 21	4	Own	3 1/16x5 1/4	19.6	L	Own	FS	Ens	G	Own	Bos	Own	Own	.....	A	3	Own	.....	.....	I	.....	D	7	23.5	Own	.....	.....	Own	.....	3030	115
																							5.2	24	Lav	32x4 1/2*	32x4 1/2*	Sch	Fir	3000	118

| | | |

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
1½ Ton—Con'd																															
Diamond T-T	....	Hin	3¾x5¼	22.5	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	U	3	Spic	Math	.....	W	Own	½	18.2	29.9	Gem	36x3½	36x5	.....	.....	4150	144
Diehl B	....	H-Sp 7000	3½x5	19.6	L	.....	FS	Zen	G	.....	Bos	.....	M-E	Durs 02500B	...	3	M-E	Row	Sals 1544E	I	Torb S 327	D	5.3	.....	Ros	.....	.....	Way	.....	2500	120
Dixon	2650	Cont J-4	3¾x5	22.5	L	GO	F	Zen	G	Pier	Bos	.....	Full	Full	U	4	Hart	SP	.....	W	Tim	F	Opt	Opt	Ros	36x3	36x6	StM	.....	4300	145
D-Olt AA	2450	H-Sp 7000	3½x5	19.6	L	GO	S	Zen	V	Dup	RBo	.....	B-Li	B-Li 20	U	4	Spic	SP	Tim 1250	W	Tim 6250	½	7.75	37.2	Ros	34x4	34x5	.....	.....	4500	168
Duplex GH	....	Buda WTU	3¾x5½	22.5	L	Mod	FS	Zen	G	.....	Wes	Wes	Covt	Covt	U	3	Pet	Pen	.....	W	Shel	½	6.5	26	Woh	36x5*	36x5	Mot	Fir	3900	138
Federal S-21	....	Cont J-4	3¾x5	22.5	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	Own	A	3	Pet	.....	Own	W	Tim 6352	½	7.2	20.65	Gem	36x3½	36x5	.....	.....	3900	144
Federal S-22	....	Cont J-4	3¾x5	22.5	L	Own	F	Zen	V	.....	Eis	Rm	B.B.	Own	A	3	Pet	.....	Own	W	Tim 6352	½	7.2	20.65	Gem	34x5*	36x6*	.....	.....	3900	144
Front Drive C	2800	Buda CTU	3¾x5¼	22.5	L	Hoo	F	Zen	V	Pier	Spi	Opt	B.B.	Own FTT	A	3	Own	Tut	Own FD	W	Own D	½	8	32	Ros	34x5‡	34x4‡	Stn	Opt	3200	144
Garford 25 B	2375	Buda WU	3¾x5⅛	22.5	L	Own	S	Strm	V	.....	Spl	.....	.....	Own	A	3	Spic	Per	Own	W	Tim 6460	½	7.75	.....	Ros	36x3½	36x5	.....	.....	4000	135
Gotfredson	2300	Buda GTU	4 x5¼	25.6	L	McC	F	Zen	V	.....	Bos	AtK	B-Li	B-Li 35	U	4	Spic	Am	Tim 1452	W	Tim 6460	½	6.5	34.8	Gem	36x6*	38x7*	MM	Fir	4000	144
Graham Bros	1325	Dodge	3½x4½	24.1	L	McC	FS	Stew	V	.....	NE	NE	Dod	Dod	U	3	UP	Det	Dod	S	Own B-360	½	6.28	29.29	Dod	33x4½*	36x6	.....	.....	2625	140
Gramm-Pioneer 15	1750	Cont N	3¾x5	22.5	L	Own	FS	Strm	G	.....	NE	NE	Full	Full	U	3	Own	Per	Col	W	Own 602-8	½	7.8	28	Ros	36x3½	36x5	Bim	Fir	3660	138
Gramm-Pioneer 65	2250	Cont J-4	3¾x5	22.5	L	Own	FS	Strm	G	.....	NF	NE	Full	Own	A	3	Own	Per	Col	W	Own 602-8	½	7.8	28	Ros	36x3½	36x5	Bim	Fir	3860	138
G. W. W. Farm Spec	1585	Wei	3¾x5½	22.5	H	Chic	F	Sheb	G	.....	Del	Del	Full	Full TU 3	U	3	Acm	GC	Shul 350	I	Clark 10	D	7	.....	Woh	35x5	35x5	Roy	Fir	3200	142
Hal-Fur	2350	Hin 400	4 x5½	25.6	L	GO	F	Zen	V	Hin	Apo	Wes	M-E	B-Li 35	U	4	Pet	Pen	Vul 3F	W	Vul 3R	..	7.5	35	Gem	34x5*	38x7*	Smi	Fir	3750	168
Hawkeye K	1900	Buda WTU	3¾x5⅛	22.5	L	.....	F	Zen	G	.....	Eis	.....	Full	Full	U	4	Pick	Det	Shul	I	Clark ID	D	7.6	.....	Ros	34x5*	38x7	Day	.....	3750	149
Hug	1350	Buda WTU	3¾x5⅛	22.5	L	Per	F	Zen	G	.....	Bos	.....	Full	Full SU 1	U	3	Bld	Tut	Col 5000	B	Clark BSpec	½	5.5	26.62	Ros	34x5	34x5	Stn	Fir	2900	118
Independent G (Iowa)	2040	Cont J	3¾x5	22.5	L	GO	FS	Strm	V	.....	Bos	.....	Full	.....	U	3	Bld	GC	.....	I	.....	D	8.2	.....	Lav	34x3½	34x5	StM	Fir	3875	142
Indiana 12	....	Wau BUX	3¾x5¼	22.5	L	McC	F	Strm	G	.....	Eis	.....	B.B.	B-Li 35	A	3	Spic	Shel	Shel 33FA500	W	Shel W-1501	½	7.8	31.2	Woh	34x3½	34x6	Bim	.....	4100	146
International 31	....	Own	3½x5¼	19.6	L	Own	FS	Ens	G	Own	Bos	Own	Own	.....	A	3	Own	.....	.....	I	.....	D	8	26.5	Own	.....	.....	Own	.....	3200	128
Jumbo 15-S	....	Buda WTU	3¾x5⅛	22.5	L	Own	F	Zen	G	.....	Eis	NE	Full	Full LTU5	U	3	Bld	SP	Col 7000	B	Clark B-360	F	6.2	25	Jac	36x6*	36x6*	.....	Fir	4170	143
Jumbo 15	....	Buda CTU	3¾x5¼	22.5	L	Own	F	Zen	G	.....	NE	NE	Full	Full LTU 5	U	3	Bld	SP	Col 7000	I	Clark ID	D	7.2	29	Jac	36x3½‡	36x5‡	.....	Fir	4530	144
Kalamazoo GI	2100	Cont N	3¾x5	22.5	L	GO	FS	Strm	V	Pier	Eis	Dy	Full	Full	A	4	Bld	Shel	Shul 510	W	Wis	½	8.5	40.8	Ros	34x4	34x5	Bim	.....	4450	144
Kalamazoo LG	2775	Her O	4 x5	25.6	H	GO	F	Strm	V	Pier	Sim	Sim	Full	Full	A	4	Bld	Shel	Shel 0343	W	Shel	½	8.6	40.8	Ros	36x4	36x7	Smi	.....	5080	144
Kearns N	1650	H-Sp 7000	3½x5	19.6	L	Own	FS	Zen	V	.....	Bos	Dy	Full	.....	U	3	M-E	Shel	.....	I	.....	.....	7.6	30	Lav	34x4	34x6	.....	Fir	3000	136
Kelly-Springfield K34	2700	Own	3¾x5¼	22.5	L	Lng	F	Zen	G	Pier	Eis	Del	B.B.	Covt	A	3	Pet	Per	Own	W	Own	½	8.5	31.2	Gem	36x3½	36x6	StM	.....	4670	Op
Kenworth	....	Buda ITU	4 x5½	25.6	L	Idl	F	Strm	V	Mon	Bos	.....	B.B.	Cott BUA	U	3	Bld	Tut	Shel	W	Shel W-103	½	7.7	31	Ros	36x3½	36x6	Jon	.....	4620	142
Kissel General Utility	1975	Own 40000	3⅞x5½	24.1	L	MeC	S	Strm	V	Pier	Eis	.....	W-Gr	.....	U	3	Spic	Math	.....	W	.....	½	7.8	28.5	Jac	34x3½	34x5	Pru	3656	4100	152
Larrabee	2400	Cont J-4	3¾x5	22.5	L	R-T	F	Zen	G	Phar	Bos	.....	B-Li	B-Li 30	U	3	Spic	Shel	Shel 33FA500	W	Shel W-1501	½	7.66	31.4	Gem	34x3½	34x5	Hoo	.....	4500	138
Luedinghaus W	2490	Wau BUX	3¾x5¼	22.5	L	Own	FS	Sheb	G	Wau	Spl	.....	B.B.	.....	U	3	Spic	Tut	.....	W	.....	½	8.6	26.6	Lav	34x3½	34x5	StM	.....	4100	144
Maccar Li	....	Wis TAU	4 x6	25.6	L	Own	F	Strm	V	Pier	Eis	Bos	B-Li	B-Li 35	U	4	Spic	Mer	Tim 1522	W	Tim 6460	½	8.75	46.8	Ros	36x4‡	36x6‡	Day	.....	4900	150
Mack AB	3000	Own AB	4 x5	25.6	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	C	Own	D	6.99	37.84	Own	36x4	36x3½†	.....	.....	5100	Op
Mack AB	3450	Own AB	4 x5	25.6	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	R	Own	F	7.6	36.80	Own	36x4	36x3½†	.....	.....	5300	Op
Mason Road King	....	Her O	4 x5	25.6	L	Fed	F	John	G	.....	AuL	AuL	Hoos	.....	A	3	Spic	Arm	Fli	B	.....	F	4.9	17.42	Lav	34x5	34x5	Hay	Fir	3320	130
Master 21	....	Buda OU	4½x5½	27.2	L	Chic	F	Zen	V	Pier	Eis	.....	Full	Full	U	3	Spic	Det	Shel	W	Tim	½	Opt	Opt	Ros	34x4	34x6	Pru	.....	4300	142
Maxwell	....	Own	3⅝x4½	21	L	Own	FS	Stew	G	.....	AtK	Rm	Own	.....	U	3	Own	.....	.....	W	.....	½	7.25	34.4	Own	35x5	35x5	Kel	Fir	2385	124
Menominee H	2475	Wis EAU	4 x5	25.6	L	Own	FS	Strm	G	Mon	Eis	Opt	Det	Cott AAU	U	3	Spic	Tut	Shul	W	Wis	½	8.25	30.36	Ros	36x3½	36x5	Stn	Fir	4220	144
Moreland BX	2350	Her O	4 x5	25.6	L	Own	F	Zen	G	.....	AuL	AuL	B-Li	B-Li 30	U	3	Pet	US	Tim 1452	W	Tim 6461	½	7	28	Ros	36x3½	36x6	Smi	.....	4125	132
Nelson-LeMoon G-2	....	Cont K-4	4½x5¼	27.2	L	Chic	F	Strm	G	Phar	Bos	Bos	B-Li	B-Li 35	U	3	Own	GC	Tim 1520	W	Tim 6460	½	7	....	Ros	36x4	36x6	StM	Gdy	3400	Op
Noble A-21	1890	Buda WTU	3¾x5⅛	22.5	L	Chic	F	Strm	V	.....	Eis	Bos	Full	Full LTU 4	U	3	Bld	.....	Shel 33FA500	W	Shel 1501	½	6.50	26	Lav	34x5	34x5	.....	Fir	3700	144
Ogden D	....	Cont N	3¾x5	22.5	L	Chic	FS	Strm	G	Pier	Spl	.....	B-Li	.....	U	3	M-E	Tut	.....	W	.....	½	8.75	.....	Ros	36x3½	36x5	Stn	.....	3400	136
O. K	2000	Buda ITU	4 x5½	25.6	L	R-T	FS	Zen	V	Pier	Eis	.....	Full	.....	U	3	Hart	Cham	.....	W	.....	½	8.25	27.9	Ros	36x3½	36x5	Bim	.....	4310	146
Parker E-23	2150	Wis SU	4 x5	25.6	H	Own	F	Strm	V	.....	Wes	Wes	B-Li	B-Li 30	U	3	Bld	Tut	Cont 2001	W	Wis 800-HA	½	7.25	29.8	Lav	34x3½	34x6	Bim	.....	3700	140
Rainier R36	2490	Cont J-4	3¾x5	22.5	L	EM	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 30	U	3	Spic	Per	Tim 1520	W	Tim 6460	½	7.75	25.8	Ros	34x3½	34x5	Jon	.....	3900	147
Republic 10-E	....	Cont N	3¾x5	22.5	L	Own	FS	Strm	V	.....	Bos	.....	Full	.....	U	3	Spic	Math	.....	I	.....	D	6.28	25.12	Jac	34x5*	34x5*	Nor	Fir	3225	124
Rumely A	2150	Buda CTU	3¾x5¼	22.5	L	Mod	F	Strm	G	Pier	Spl	.....	Full	Full LTU 5	U	3	Bld	Math	Shul 510	W	Shel 1501-W	½	7.8	31.2	Gem	36x3½	36x5	Mot	Gdy	4055	144
Sandow	1895	Cont N	3¾x5	22.5	L	Chic	FS	Strm	V	.....	Eis	.....	Full	Full TU-¾	U	3	Spic	.....	.....	W	Shel 1501-W	.....	7.75	.....	Ros	.....	.....	Opt	Fir	3495	138
Sanford W-15	....	Cont N	3¾x5	22.5	L	R-T	S	Strm	V	.....	Con	Dy	B-Li	B-Li 30	U	3	Spic	Shel	Shel 33FA500	W	Shel 1501	½	6.5	26.67	Ros	36x6	36x6	Hoo	Fir	3800	140
Schacht	2500	Wis SU	4 x5	25.6	H	Own	F	Zen	V	.....	.....	.....	Full	Full	U	4	Bld	Shel	.....	R	Wis	½	7.	33.6	Ros	36x3½	36x7	.....	.....	4400	144
Selden Unit 30	2375	Cont J-4	3¾x5	22.5	L	Lng	F	Strm	G	.....	Eis	.....	B-Li	B-Li 30	U	3	Spic	Per	Tim 1452	W	Tim 6460	½	7	23.31	Lav	34x3½	34x5	Arc	.....	4250	137
Service 33	....	Buda GBU-1	4 x5¼	25.6	L	McC	F	Strm	V	.....	Eis	.....	B.B.	B-Li 35	A	4	Spic	Shel	Shul 350	W	Tim 6352	½	7.2	38.5	Ros	34x3½	34x6	Stn	Opt	4485	146
Signal H	....	Cont K-4	4½x5¼	27.2	L	R-T	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Shel	.....	W	.....	½	7.75	31	Ros	34x4	36x6	StM	.....	4760	146
Standard 1½K	1695	Cont N	3¾x5	22.5	L	Lng	F	Strm	V	.....	Eis	.....	B-Li	B-Li 30	U	3	Spic	Am	Tim 1452	W	Tim 6352	½	7.2	31.3	Ros	34x3½	34x5	.....	.....	3466	134
Sterling	3240	Own	4 x5¾	25.6	L	Own	F	Zen	V	Wau	Eis	.....	B-Li	B-Li 35	U	4	Spic	Math	Tim 1452	W	Tim 6460	½	7	37.45	Ros	36x3½	36x5	Pru	.....	4700	142
Stewart 9	1870	Cont N	3¾x5	22.5	L	Bus	FS	Zen	V	.....	Eis	.....	Full	.....	U	3	Hart	Det	.....	I	.....	D	7.6	22.8	Gem	34x3½†	34x6	Way	Fir	3440	140
Stoughton B	2150	.....	.....	.....	L	Own	FS	Strm	G	Wau	Eis	.....	B-Li	B-Li 30	U	3	Ther	Own	Shel 33FA500	W	Shel W-1501	½	7.8	32	Ros	36x3½	36x5	Bim	Gdy	3800	140
Tower J	1785	Cont K4	4½x5¼	27.2	L	Own	S	Zen	G	.....	Eis	.....	Full	Full LTU5	U	3	Bld	Det	Tim 1452	W	Tim 6460	½	7.25	29	Ros	35x5*	38x7*	Pru	Fir	4520	142
Traffic Speedboy	1750	Cont N-4	3¾x5	22.5	L	Own	FS	Cart	G	.....	Bos	GD	Covt	Covt MUNC	U	3	Ther	Det	Own	I	Russ 34-I	D	6.15	22.5	Own	35x5*	35x5*	Day	Fir	3400	128
Transport 26	....	Buda WTU	3¾x5½	22.5	L	Mod	F	Zen	V	.....	Eis	Opt	Full	Full SU-1	U	3	Hart	Det	Col 7000	I	Clark 1-D	D	7.25	29	Jac	34x3½	34x5	Mot	.....	3800	140
Traylor B	2390	Buda WTU	3¾x5⅛	22.5	L	GO	F	Zen	G	Sim	Spl	.....	Covt	Covt MOSE	U	3	M-E	Mer	Shel 33FA500	W	Shel W-1501	½	.....	.....	Ros	34x3½	34x6	Sch	.....	4000	140
Triangle A	1985	Wau BUX	3¾x5¼	22.5	L	Per	FS	Strm	G	Wau	Eis	.....	Full	Full LTU5	U	3	UP	Det	Col 7007	I	Clark 1-D	D	7.25	29	Gem	34x3½	34x6	Roy	Fir	3750	144
Ultimate A	3200	Buda ITU	4 x5½	25.6	L	Own	F	Strm	G	Pier	Eis	Bos	B-Li	.....	U	4	Spic	Shel	Shel D-370	W	Shel W-301	½	6.5	37.4	Ros	36x3½	36x6	Jon	Fir	4500	140
United Express	....	Her O	4 x5	25.6	L	Per	FS	Zen	G	.....	Bos	Bos	B-Li	.....	U	3	Spic	.....	.....	B	Col	¾	5.	20.86	Lav	34x5	34x5	.....	Fir	3050	148
U. S. N	....	Cont N	3¾x5	22.5	L	Lng	FS	Strm	V	.....	Eis	Opt	Full	Full LTU 4	U	3	Opt	Shel	Shul 350	I	Clark ID	D	7 6	25.3	Lav	36x3½	36x5	Sch	.....	3800	144
Velie 52	1985	Her CU3	3¾x5⅛	22.5	L	.....	F	Strm	V	Mon	.....	.....	B.B.	Own	U	3	.....	Math	Col	I	Torb	.....	8.33	.....	Ros	35x5*	38x7*	.....	.....	.....	141
Wichita L	2100	Wau BX	3¾x5¼	22.5	L	EM	FS	Strm	G	Wau	Bos	NE	Own	B-Li 35	A	4	Ther	Det	Shel	W	Shel 103	½	Opt	.....	Ros	36x3½	36x5	Bim	Fir	4100	144
Wilcox BB	2550	Own	4½x5	29.9	L	.....	S	Strm	G	Dup	Bos	.....	Own	.....	A	4	Own	Shel	.....	R	.....	½	8.25	29.9	Own	36x4	36x5†	.....	.....	4600	135
Wilson F	2270	Cont	3¾x5½	22.5	L	Lng	FS	Hol	G	Pier	Eis	.....	B.B.	Cott A	A	4	Ther	Pet	Tim 1520	W	Tim 6460	½	7.75	24	Ros	36x3½	36x5	.....	.....	3800	140
Winther 39	1950	Wis CAU	3¾x5	22.5	L	Brm	F	Strm	G	.....	Eis	Wes	Full	Full TU¾	U	3	Pet	Det	Col	I	Clark	D	7	21	Lav	34x3½	34x5	Own	Fir	3700	140
Winther 430	2550	Wis CAU	3¾x5	22.5	L	Brm	F	Strm	G	.....	Eis	Wes	Full	Full TU¾	U	3	Pet	Det	Own	I	Clark	D	9	36	Lav	32x4	32x4	Own	Fir	4100	132
Wisconsin B	1850	Wau Y	4 x5¼	25.6	L	Chic	FS	Strm	V	Phar	Opt	Bos	B-Li	B-Li 31	U	3	Spic	Det	Tim	W	Tim 5511	½	6.25	31.5	Lav	33x5	32x6	Bim	Gdy	3200	136
Witt-Will N	2450	Cont C-4	4½x5¼	27.2	L	Own	FS	Zen	G	Pier	Eis	.....	B-Li	B-Li 35	U	3	Spic	Del	Tim 1520	W	Tim 6460	½	7	30.36	Ros	36x3½	36x5	Arc	Fir	4000	144

2 Ton

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TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
2 Ton—Con'd																															
Wichita M	2400	Wau BX	3¾x5¼	22.5	L	EM	FS	Strm	G	Wau	Bos	NE	Own	B-Li 35	A	4	Ther	Det	Shel	W	Shel W-103	½	Opt	.....	Ros	36x3½	36x6	Bim	Fir	4400	144
Wisconsin	2700	Cont K-4	4⅛x5¼	27.2	L	.....	FS	Strm	V	Phar	Bos	.....	B-Li	B-Li 35	U	4	Spic	Det	Det	W	Tim	½	8.25	41.5	Lav	36x6	38x7	Bim	Gdy	4600	140
Witt-Will P	2750	Cont C-4	4⅛x5¼	27.2	H	Own	FS	Zen	G	Pier	Eis	.....	B-Li	B-Li 35	U	4	Spic	Del	Tim 1520	W	Tim 6560	½	7.1	.....	Ros	36x3½	36x6	Arc	Fir	4600	Op
2½ Ton																															
Acason A-3	2850	Wau	4⅜x5¾	30.6	...	.....	...	Zen	V	Wau	Bos	.....	.....	Cott R	A	4	Bld	Det	Tim 1542-B	W	Tim 6560	F	5.2	43.	Ros	36x4	36x10	Smi	.....	.....	180
Acme 60	....	Cont K-4	4⅛x5¼	27.2	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Bld	Det	Tim 1540B	W	Tim 6560	F	9.25	48.10	Ros	36x4	36x7	Bim	.....	4830	152
American	3350	Wis	4 x6	25.6	L	GO	F	Strm	G	Pier	Apo	.....	Det	Cott R-4	U	4	Acm	SP	Sav 20-O	W	Thom H	F	8.33	.....	Ros	36x4	36x4†	Ind	.....	5000	158
Armleder HWB	3150	Buda HTU	4¼x5½	28.9	L	Lng	F	Zen	G	Phar	Bos	Wes	B-Li	B-Li 50	U	4	Spic	Math	Tim 1542	W	Tim 6560	F	9.25	49.5	Ros	36x4	36x4†	StM	.....	5000	166
Armleder HWC	3150	Cont C-4	4⅛x5¼	27.2	L	Lng	S	Zen	G	Phar	Bos	.....	B-Li	B-Li 50	U	4	Spic	Math	Tim 1542	W	Tim 6560	F	9.25	49.5	Ros	36x4	36x4†	StM	.....	5000	166
Atco A	....	Buda	4¼x5½	28.9	L	Chic	F	Strm	G	Pier	Eis	.....	Full	.....	A	4	Hart	Shel	.....	W	.....		8.7	41.6	Ros	36x4	36x7	Smi	.....	4900	150
Atterbury 22C Std	3375	Cont K-4	4⅛x5¼	27.2	L	Own	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 51	A	4	Spic	SP	Tim 1542B	W	Tim 6560	F	9.25	49.48	Gem	36x4	36x4†	Arc	Fir	5670	156
Atterbury 22C LWB	3475	Cont K-4	4⅛x5¼	27.2	L	Own	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 51	A	4	Spic	SP	Tim 1542B	W	Tim 6560	F	9.25	49.48	Gem	36x4	36x4†	Arc	Fir	5670	180
Autocar H	3100	Own	4 x5½	25.6	L	Own	S	Strm	G	Phar	.....	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3	Ros	34x5	36x7	Hoo	.....	5500	114
Autocar K	3200	Own	4 x5½	25.6	L	Own	S	Strm	G	Phar	.....	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3	Ros	33x5	36x7	Hoo	.....	5500	138
Available JH	3160	Her O	4 x5	25.6	L	Chic	FS	Zen	V	Pier	Bos	.....	B-Li	B-Li 35	A	4	M-E	Tut	Tim	W	Tim 6560	F	8.5	40.3	Ros	36x4	36x8	Sch	.....	4750	152
Bell O	2550	Buda ETU	4¼x5½	28.9	L	Chic	F	Strm	V	Dup	Eis	.....	B.B.	.....	U	3	UP	Det	.....	I	.....	D	8	38.4	Gem	34x4	34x7	Bim	Fir	4200	146
Bessemer J2	2895	Cont C-2	4⅛x5¼	27.2	L	Stn	FS	Strm	G	Pier	Bos	.....	B.B.	B-Li 50	A	4	Bld	Per	Shul 510	R	LM 7250	½	....	.....	Ros	36x4	36x4†	Fir	Sch	4800	158
Betz	2985	D-3	4¼x5½	29	L	Chic	F	Zen	G	Mon	Bos	.....	B-Li	B-Li 35	U	4	Pet	Mar	Tim 1540B	W	Tim 6560	F	....	.....	Ros	36x4	36x8	Stn	.....	5250	160
Brinton D	2975	Cont C-4	4⅛x5¼	27.2	L	Chic	F	Strm	G	Pier	Bos	.....	B-Li	.....	U	3	Spic	Tut	.....	W	.....	F	....	33.6	Ros	36x4	36x8	Smi	.....	4900	150
Brockway K	....	Cont K-4	4⅛x5¼	27.2	L	Bus	F	Strm	V	Phar	Eis	.....	B-Li	B-Li 35	A	4	Spic	Mer	Tim 1542	W	Tim 6560	F	7.75	41.5	Gem	36x4	36x8	Hoo	.....	5260	153
Chicago C	....	Her O	4 x5	25.6	L	Brm	F	Strm	G	Sim	Bos	.....	B-Li	B-Li 35	U	4	Pet	Math	Tim 1542	R	Huck 25	F	8.45	41.9	Gem	36x4	36x7†	Opt	Stn	5200	156
Clydesdale 8	....	Cont K-4	4⅛x5¼	22.5	L	Own	F	Zen	V	Own	Bos	.....	B-Li	B-Li 35	A	4	Spic	Stan	Tim 1542B	W	Tim 6460	½	7.75	41.5	Ros	36x4	36x7	.....	.....	.....	156
Commerce 25B	....	Cont K-4	4⅛x5¼	27.2	L	Lng	F	Zen	V	....	Eis	Bos	B-Li	B-Li	A	4	Spic	Am	.....	W	Tim	F	7.75	41.46	Ros	36x6	40x8	Mot	Fir	5200	156
Concord B	3600	Buda HTU	4¼x5½	28.9	L	Bus	F	Zen	G	Mon	Eis	.....	B-Li	.....	U	4	Spic	Per	.....	W	.....	F	9.25	37	Ros	36x4	36x8	Arc	Fir	5450	150
Corbitt B-22	....	Cont K-4	4⅛x5¼	27.2	L	McC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 50	U	4	Hart	Shel	Shel 3FA10	W	Shel W-21	½	8.75	46.81	Ros	36x4	36x7	Bim	Fir	5325	152
Day Elder DN	....	Cont K-4	4⅛x5¼	27.2	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 35	U	4	Hart	Shel	Col 7018	W	Tim 6560	F	8.5	45.18	Gem	36x4	36x7	Van	Fir	3950	144
Dependable D	2650	Buda ITU	4 x5½	25.6	L	Lng	F	Zen	V	Mon	Spl	AuL	Full	Full TU4	U	3	Acm	Per	Shul 350	W	Wis 800	½	8.5	35.75	Ros	36x4	36x7	Bim	Fir	5300	144
Diamond T–U2	....	Hin	4 x5½	25.6	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	U	4	Spic	Math	.....	W	.....	F	7.8	36.81	Gem	36x4	36x8	.....	.....	5250	160
Dixon	3250	Cont K-4	4⅛x5¼	27.2	L	GO	F	Zen	G	Pier	Bos	.....	Full	Full	U	4	Hart	SP	.....	W	Tim	F	Opt	Opt	Ros	36x4	36x8	Smi	.....	5800	154
D-Olt C	3250	Mid 402	4⅛x5¼	27.2	H	GO	F	Zen	G	Dup	RBo	.....	B-Li	.....	U	3	Spic	SP	.....	W	.....		8.5	.....	Ros	36x5	36x4†	.....	.....	5350	168
Duplex AC	....	Hin 400	4 x5¼	25.6	L	Mod	...	.....	V	Opt	Eis	Opt	B-Li	B-Li	U	4	Pet	Pen	.....	W	Vul	F	8.50	45.4	Ros	34x5†	36x8	Mot	Fir	5500	160
Duplex AB	....	Hin 400	4 x5¼	25.6	L	Mod	...	.....	V	....	Wes	Wes	B-Li	B-Li	U	4	Pet	Pen	.....	W	Shel	½	6.50	34.7	Ros	35x5*	38x7	Mot	Fir	4900	173
Facto	2695	Buda EBU	4¼x5½	28.9	L	Bus	F	Zen	G	Pier	Apo	.....	Full	Full GU	A	4	Bld	SP	.....	W	Tim 6560	F	7.75	33.9	Ros	36x4	36x8	Smi	Fir	5800	155
Federal U-2	....	Cont K-4	4⅛x5¼	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	Det	A	4	Spic	....	Own	W	Tim 6560	F	7.75	45.6	Gem	36x4	36x4†	.....	.....	5300	157
Garford 70 H	3250	Buda HTU	4¼x5½	28.9	L	Own	F	Strm	G	Sim	Spl	.....	Own	Own	A	4	Spic	Per	Tim 1542B	W	Tim 6560	F	7.75	.....	Ros	36x4	36x8	.....	.....	5300	144
Gary J	3050	Buda HTU	4¼x5½	28.9	L	Chic	FS	Zen	V	McC	Eis	.....	Full	.....	U	4	Spic	Math	.....	W	.....	F	8.5	41	Ros	36x4	36x7	Pru	Gdy	5500	148
Gotfredson	3000	Buda ETU	4¼x5½	28.9	L	McC	F	Zen	V	Phar	Bos	.....	B-Li	B-Li 51	A	4	Spic	Am	Tim 1520	...	Tim 6560	F	9.25	49.3	Gem	36x4	36x8‡	Day	.....	6325	152
Gramm-Pioneer 125	2900	Cont K4	4⅛x5¼	27.2	L	Own	F	Strm	G	Sim	NE	NE	Full	Own	A	4	Own	Per	Col	W	Shel	½	7.7	36.7	Ros	36x4	36x7	Bim	.....	4910	...
Hal Fur B	3000	Hin HA 500	4¼x5½	28.9	L	GO	F	Zen	V	Hin	Bos	Wes	B.B.	Own 55	A	4	Pet	Per	Tim 1540	W	Tim 6560	F	7.75	57.4	Gem	36x6	Opt	Smi	Fir	5000	Op
Harvey WFB	2950	Buda ETU	4¼x5½	28.9	L	Own	F	Strm	G	McC	Spl	.....	Full	B-Li 50	A	4	Spic	Bea	Shel D-370	W	Shel W-21	½	7.75	37.5	Ros	36x4	36x8	Smi	.....	6800	160
Hawkeye M	2145	Buda HU	4¼x5½	28.9	L	Brm	...	Zen	G	Sim	Eis	.....	Full	Full	U	4	Hart	Det	Shul	I	Clark 2D	D	18.	.....	Ros	36x4	36x6	.....	.....	4500	149
Hawkeye ML	2195	Buda HU	4¼x5½	28.9	L	Brm	...	Zen	G	Sim	Eis	.....	Full	Full	U	4	Hart	Det	Shul	I	Clark 2D	D	18.	.....	Ros	36x4	36x6	.....	.....	.....	160
Hendrickson N	3200	Buda ETU	4¼x5½	28.9	L	Chic	F	Strm	G	McC	Spl	.....	Full	Full G-7	A	4	Ther	Mar	Tim 1542	W	Tim 6560	F	7.7	37.2	Ros	36x4	36x7	Stn	.....	.....	Op
Hewitt-Ludlow	....	Buda HU	4¼x5½	28.9	L	Mod	F	Strm	V	....	Bos	.....	.....	.....	U	4	Spic	...	Shel	W	Shel	½	....	.....	Ros	36x4	36x8‡	.....	.....	.....	156
Independent HI (Iowa)	2940	Cont K-4	4⅛x5¼	27.2	L	Chic	FS	Strm	V	....	Bos	.....	Full	.....	U	4	Bld	Tut	.....	W	Shel W21	D	10	.....	Lav	36x4	36x7	StM	Fir	4950	150
Indiana 25	....	Own 38	4⅛x5½	27.2	L	McC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 51	A	4	Spic	Shel	Shel D-370	W	Shel W-21	½	7.75	41.3	Woh	36x4	36x8	Bim	.....	5850	156
International 52-Bus	....	Own	4¼x5	28.9	H	Own	FS	Ens	V	Own	Spl	Own	Own	.....	A	4	Own	.....	.....	I	.....	D	4.85	25	Own	.....	.....	Own	.....	5515	190
Jumbo 25	....	Buda HU	4¼x5½	28.9	L	Own	F	Zen	V	Sim	Eis	.....	Full	Full GU 7	U	4	Bld	SP	Shul 510	I	Clark 2-D	D	9	43.5	Jac	36x4‡	36x8‡	.....	Fir	5190	152
Kalamazoo HD	3500	Wis UAU	4¼x6	28.9	L	GO	F	Strm	V	Pier	Bos	Dy	Full	Full	A	4	Bld	Shel	Shel D-343	I	Shel	½	9.5	57	Ros	36x5	36x10	Smi	.....	6720	144
Kalamazoo NH	3350	Wis TAU	4 x6	25.6	L	GO	F	Strm	V	Pier	Bos	Dy	Full	Full	A	4	Bld	Shel	Shel D-343	M	Shel	½	8.75	42.8	Ros	36x5	36x10	Smi	.....	6400	160
Kelly-Springfield K35	2900	Own	3¾x5¼	22.5	L	Lng	F	Zen	G	Pier	Eis	Del	Own	Covt	A	3	.....	Per	Own	C	Own	D	10.6	35.11	Gem	36x4	36x4†	StM	.....	4850	Op
Kelly-Springfield K38	2900	Own	3¾x5¼	22.5	L	Lng	F.	Zen	G	Pier	Eis	Del	B.B.	Covt	A	4	Pet	Per	Own	W	Own	½	11.6	35.03	Gem	36x4	36x4†	StM	.....	5300	Op
Kelly-Springfield K–39	....	Own	3 7/8x5¼	24.1	L	Lng	F	Zen	G	Pier	Eis	Del	B.B.	B-Li 51	A	4	Pet	Per	Own	I	Clark 2H	D	9	48.15	Gem	36x4	36x4†	Cla	Fir	5700	150
Kenworth K	....	Buda ETU	4¼x5½	28.9	L	Idl	F	Strm	V	Mon	Bos	.....	B.B.	Cott RU	U	4	Bid	Tut	Shel D-370	W	Shel W-21	...	8.75	45.22	Ros	36x4	36x8	Smi	.....	5270	150
Kissel Freighter	2875	Own 50000*	4¼x5½	28.9	L	McC	S	Strm	V	Pier	Eis	.....	W-Gr	.....	A	4	Spic	...	.....	W	.....	F	8.5	42.5	Jac	36x4	36x8	Pru	.....	5100	168
Lange E	3450	Cont K-4	4⅛x5¼	27.2	L	Own	F	Strm	V	....	Bos	.....	B-Li	.....	A	4	Pet	SP	Tim 1630B	W	Tim 6560	F	9.25	49.5	Ros	36x4	36x7	Hoo	Opt	5800	Op
Larrabee K-5	3450	Cont L-4	4½x5½	32.4	L	R-T	F	Zen	G	Phar	Bos	.....	B-Li	B-Li 51	A	4	Spic	Shel	Shel D-370	W	Shel W-22	½	7.6	47	Ros	36x4	36x8	Smi	.....	5700	156
Mack AB	3400	Own AB	4¼x5	28.9	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	C	Own	D	8.98	43.5	Own	36x4	36x4†	.....	.....	5400	Op
Mack AB	3850	Own AB	4¼x5	28.9	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	R	Own	F	9.25	44.9	Own	36x4	36x4†	.....	.....	5600	Op
Master 41	....	Buda ETU	4¼x5½	28.9	L	Chic	F	Zen	V	Pier	Eis	.....	Full	Full	U	4	Spic	Det	Tim	W	Tim 6560	F	Opt	Opt	Ros	34x4	36x8	Pru	.....	5700	154
Nelson & LeMoon	....	Cont K-4	4½x5¼	27.2	L	Chic	F	Strm	G	Phar	Bos	Bos	B-Li	B-Li 50	U	3	Own	GC	Tim 1542	B	Tim 6566	F	7.7	.....	Ros	36x4	36x7	StM	Gdy	4100	Op
Netco HL	3500	Cont L-4	4½x5½	32.4	L	E-M	F	Zen	V	Phar	Eis	.....	B-Li	B-Li 55	A	4	Spic	Math	Tim 1542 B	W	Tim 6560	F	7.75	41.46	Gem	36x4	36x8	Arc	Opt	5750	168
Niles H	3250	Buda ETU	4¼x5½	28.9	L	Mod	S	Strm	G	....	Eis	Bos	B-Li	B-Li 50	A	4	Pet	PS	Tim 1520B	W	Tim 6560	F	9.25	37	Gem	36x6*	40x8*	Hoo	Fir	4935	140
Noble D-51	3150	Buda HTU	4¼x5½	27.2	L	Chic	F	Strm	V	Pier	Eis	Wes	Full	Full G-7	A	4	M-E	.....	Shel D-370	W	Shel W-21	½	8.75	42	Lav	36x4	36x8	Bim	Fir	5700	162
Ogden E2	....	Cont K-4	4⅛x5¼	27.2	L	Chic	FS	Zen	G	Pier	Spl	.....	B-Li	.....	A	4	M-E	Tut	.....	W	.....	½	8.7	.....	Ros	36x4	36x8	Stn	.....	5600	160
O. K	2900	Buda HTU	4¼x5½	28.9	L	RT	FS	Zen	V	Pier	Eis	.....	Full	.....	U	4	Hart	Cham	.....	W	.....	½	9.66	46	Ros	36x4	36x8	Bim	.....	5350	150
Old Reliable B	3500	Wis UAU	4¼x6	28.9	L	Chic	F	Strm	V	Phar	Bos	.....	Full	Full G	A	4	Pet	Shel	Shel D-370	W	Shel W-21	½	8.75	42	Ros	34x4	36x4†	Sch	.....	6000	Op
Olympic J	3200	Buda HTU	4¼x5½	28.9	L	Lng	F	Zen	V	Pier	Bos	Opt	B-Li	B-Li 50	A	4	Ther	Lig	Tim 1540B	W	Tim 6560	F	7.75	31	Ros	36x4	36x7	StM	Opt	4985	158
Oneida C	3200	Hin 400	4 x5¼	25.6	L	Mod	F	Strm	V	Hin	Apo	.....	Full	.....	U	4	Pet	Math	.....	W	.....	½	8.6	41.6	Ros	36x4	36x7	Pru	.....	5700	160
Oshkosh B	3485	Her CU-3	4 x5⅛	25.6	L	Own	F	Strm	V	Dup	NE	NE	B-Li	B-Li 50	U	4	Pet	Tut	Own	B	Own	F	8	43	Ros	40x8*	40x8*	Roy	Fir	5400	146
Oshkosh BB	3585	Her CU-3	4x 5⅛	25.6	L	Own	F	Strm	V	Dup	NE	NE	B-Li	B-Li 50	U	4	Pet	Tut	Own	B	Own	F	8	43	Ros	40x8*	40x8*	Roy	Fir	5800	165

Parker G1	3450	Wis UAU	4¼x6	28.9	L	Own	F	Strm	V	Pier	Eis	Wes	B-Li	Full G-7	A	4	Bld	Tut	Shul 510	W	Own	F	7.75	37.2		Ros	36x6*	36x4†	Bim	.....	5600	Op						
Power F	....	Hin HA 400	4 x5¼	25.6	L	Mod	F	Strm	V	Hin	Eis	Wes	B-Li	B-Li	U	4	Pet	Row	Vul F3	W	Vul F4	F	7.75	37.2		Ros	36x5	36x7	StM	Fir	5300	150						
Rainier R-20	3550	Cont K-4	4⅛x5¼	27.2	L	E-M	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 50	A	4	Spi	SP	Tim 1544B	W	Tim 6560	F	8.5	45.47	Ros	36x4	36x8	Jon	.....	5500	165						
Rainier R-20	3650	Cont K-4	4⅛x5¼	27.2	L	E-M	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 50	A	4	Spi	SP	Tim 1544B	W	Tim 6560	F	8.5	45.47	Ros	36x4	36x8	Jon	.....	5650	177						
Rowe CDW	3575	Wis NU	4¼x5	28.9	L	Fed	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 50	U	4	Spic	Shel	Shel D-370	W	Shel W-21	½	7.7	31		Ros	34x4	36x4†	Hoo	.....	4800	142						
Ruggles 40-H	2295	Own	4 x5	25.6	L	Per	F	Strm	G	.....	Bos	.....	B-Li	B-Li 35	U	4	Spic	Det	Col 8500	R	Wis 88E	½	7.85	42		Jac	36x4	36x8	Nor	Fir	4850	148						
Sandow	2750	Cont C-4	4⅛x5½	27.2	L	Chic	FS	Strm	G	Mon	Bos	.....	B-Li	B-Li 35	U	4	Spic	.....	Tim 1540-B	W	Tim 6560	...	9.25	37		Ros	.....	.....	.....	.....	4600	165						
Sanford W-25-A	....	Cont C-4	4⅛x5¼	27.2	L	McC		Strm	G	Pier	Eis	.....	B.B.	B-Li 35	A	4	Spic	Shel	Shel D-370	W	Shel 21	½	8.7	34.8		Ros	36x4	36x4†	Hoo	Fir	4290	156						
Sanford W25 B	....	Cont C-4	4⅛x5¼	27.2	L	McC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 35	A	4	Spic	Shel	Shel D-370	R	Shel-21	½	8.7	34.8		Ros	36x4	36x4†	Hoo	Fir	5330	174						
Selden Unit 50	3250	Cont K-4	4⅛x5¼	27.2	L	Lng	F	Strm	G	Phar	Eis	.....	B-Li	B-Li 51	A	4	Spic	Det	Tim 1544B	W	Tim 6560	F	8.5	45.4		Gem	36x4	36x7	Stn	.....	5980	149						
Signal J	....	Cont K-4	4⅛x5¼	27.2	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	9.25	37		Ros	34x4	36x8	StM	.....	5250	150						
Signal JL	....	Cont K-4	4⅛x5¼	27.2	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	Tim 1542B	W	.....	F	9.25	37		Ros	34x4	36x8	StM	.....	5300	180						
Standard 2¼-3½ K	2795	Cont K-4	4⅛x5¼	27.2	L	Lng	F	Strm	G	Sim	Eis	.....	B-Li	B-Li 35	A	4	Spic	Am	Tim 1542B	W	Tim 6560	F	8.5	45.4		Ros	36x4	36x8	Day	.....	5400	147						
Standard 2½-3½ KS	2875	Cont K-4	4⅛x5¼	27.2	L	Lng	F	Strm	G	Sim	Eis	.....	B-Li	B-Li-55	A	4	Spic	Am	Tim 1542B	W	Tim 6560	F	9.25	49.5		Ros	36x4	36x8	Day	.....	5488	147						
Sterling	3700	Own	4½x5¾	30.6	L	Own	F	Zen	V	Wau	Eis	.....	B-Li	B-Li 50	U	4	Spic	Math	Tim 1542B	W	Tim 6560	F	7.7	41.19		Ros	36x4	36x4†	Pru	.....	5620	156						
Stewart 7X	2590	Buda HTU	4¼x5½	29	L	Bus	F	Zen	V	Pier	Eis	.....	Full	.....	U	4	Spic	Am	.....	I	.....	D	9.	43.2		Ros	34x4†	34x8	Cla	Fir	4860	156						
Super Truck 50	3300	Wis	4 x6	25.6	L	Chic	F	Zen	G	Sim	Bos	.....	Full	Full G	U	4	Ther	Shel	.....	W	Shel W-21	½	8.75	42		Lav	36x4	36x8	Pru	.....	5200	156						
Titan 2	....	Buda GBU	4 x5¼	25.6	L	.....	F	Zen	G	Phar	Eis	.....	B-Li	.....	U	4	Spic	Math	.....	I	.....	D	8	42		Lav	36x4	36x7†	Bim	.....	4400	156						
Tower H	2175	Cont K-4	4⅛x5¼	27.2	L	Own	S	Strm	G	Pier	Eis	.....	Full	Full GU-7	U	3	Spic	Det	Tim 1542B	W	Tim 6560	F	9.2	37		Ros	36x4	36x7	Pru	Gdy	5230	146						
Triangle B	2785	Wau FU	4 x5¾	25.6	L	Whe	F	Strm	G	Wau	Eis	.....	Full	Full GU-7	U	4	Bld	Det	Torb CC3B	I	Clark 2F	D	9.1	43		Gem	36x4	36x7	Roy	Fir	4900	150						
Ultimate B	3750	Buda ETU	4¼x5½	28.9	L	Own	F	Strm	G	Pier	Eis	Bos	B-Li	B-Li 50	U	4	Spic	Shel	Shel D-370	W	Shel W-21	½	7.75	30.2		Ros	36x4	36x8	Jon	Fir	5340	154						
Union FW & FLW	3450	Wis TAU	4 x6	25.6	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full GU-7	U	4	UP	Math	Shel D-370	R	Walk 25A	...	7.86	37.7		Ros	36x5	36x8	Pru	.....	5900	155						
Union FWC (bus)	....	Wis TAU	4 x6	25.6	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full GU 9	U	4	UP	Math	Shul 650	R	Walk 25A	...	7.86	37.7		Ros	38x7	42x9	Nor	.....	5900	155						
United 50	....	Her O	4 x5	25.6	L	Per	FS	Zen	G	.....	Bos	.....	B-Li	22C-670	U	4	Spic	.....	.....	R	Wis	½	7.	37.4		Lav	34x4	34x8	.....	.....	4700	156						
Walter L	3800	Own FU	4 x5¾	25.6	L	Bus	F	Strm	G	.....	Eis	Wes	B-Li	.....	A	4	Own	.....	.....	R	.....	F	7.25	39		Gem	36x4	36x8	.....	.....	5800	168						
Ward La France 2B	3290	.....	4¾x5¾	30.6	L	Own	F	Strm	G	.....	Bos	.....	B-Li	B-Li 50	A	4	Spic	Row	Tim 1542B	W	Tim 6560	F	7.25	38.78		Ros	36x4	36x8‡	Hoo	.....	5900	170						
Wilcox CC	3000	Own	4¼x5	28.9	L	.....	S	Strm	G	Dup	Bos	.....	Own	.....	A	4	Own	Shel	.....	R	.....	½	8.6	42.35		Own	36x4	36x3½†	.....	.....	5000	135						
Wilson	2825	Cont	4⅛x5¼	27.2	L	Lng	FS	Hol	G	Pier	Eis	.....	B.B.	Cott R	A	4	Ther	Per	Tim 1540	W	Tim 6560	F	7.75	31.3		Ros	36x4	36x7	.....	.....	4625	152						
Winter & Hirsch K	3250	Cont K-4	4⅛x5¼	27.2	L	Chic	F	Strm	V	Phar	Bos	.....	B-Li	B-Li K 50	A	4	Spic	Tut	Tim 1540B	W	Tim 6560	F	8.5	45.7		Ros	36x4	36x8	Bim	.....	5200	152						
Winther 452	3775	Wis TAU	4 x6	25.6	L	Brm	F	Strm	G	.....	Eis	Wes	Full	Full LTU-5	U	3	Pet	Math	Own	I	Clark	D	9	36		Lav	34x4	36x6	Cla	.....	4300	150						
Wisconsin	3100	Cont L-4	4½x5½	32.4	L	Chic	FS	Strm	V	Phar	Eis	Bos	B-Li	B-Li 51	A	4	Pet	Det	.....	W	Tim 6560	F	9.25	.....		Lav	36x5	36x10	Bim	.....	5600	132						
Wisconsin, (Sup. Tract.)	3600	Cont L-4	4½x5½	32.4	L	Chic	FS	Strm	V	Phar	Bos	Bos	B-Li	B-Li 50	U	4	Pet	Det	.....	W	Wis	½	8.25	.....		Lav	32x6*	32x6*	Bim	.....	5800	136						
Witt-Will S	2950	Cont K-4	4⅛x5¼	27.2	L	Own	FS	Zen	...	Pier	Eis	.....	B-Li	B-Li 50	U	3	Spic	Shel	Tim 1542	W	Tim 6560	F	8.25	.....		Ros	36x4	36x8	Arc	Fir	5000	144						
3 Ton																																					
Ace 60	....	Mid 402	4⅛x5¼	27.2	H	Own	F	Zen	V	Pier	Eis	Wes	B-Li	B-Li 51	A	4	UM	Math	Tim 1542	W	Tim 6560	F	8.5	45.5		Ros	36x4	36x8	Day	Fir	5650	Op						
Acme K (Bus)	....	Cont L-4	4½x5½	32.4	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Spic	Bld	Tim 1540B	W	Tim 6511A	F	6.8	35.36		Ros	36x6*	36x5*	Bim	.....	6200	200						
Acme 60-L	....	Cont L-4	4½x5½	32.4	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Bld	Det	Tim 1540B	W	Tim 6560	F	8.5	42.2		Ros	36x4	36x7	Bim	.....	5050	156						
Autocar H	3100	Own	4 x5½	25.6	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3		Ros	34x5	36x7	Hoo	.....	5500	114						
Autocar K	3200	Own	4 x5½	25.6	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3		Ros	34x5	36x7	Hoo	.....	5600	138						
Belmont F	3500	Buda YTU	4½x6	32.4	L	Own	F	Zen	...	Pier	Apo	Dy	Full	Full GU-7	U	3	Spic	Math	Shel 550	I	Russ UI400	D	9.45	Opt.		Lav	38x7	42x9	E&O	Fir	6000	160						
Bethlehem HN	2985	Own	4 x5¼	25.6	L	GO	F	Zen	V	Pier	Bos	GD	Full	Full GU-7	U	4	UP	Math	Shel D-343	R	Wis 88E	½	8.67	41.56		Lav	36x4	36x8	.....	.....	5250	145						
Buffalo Model Six	....	Her CU-3	4 x5½	25.6	L	Own	F	Strm	V	Pier	Bos	Bos	Covt	Covt	...	10	Spic	Shel	Shel D-370	W	Shel W-21	½	8.75	.....		Ros	34x5‡	36x5†	Jon	Gdy	6200	155						
Clinton 65	3550	Buda ETU	4¼x5½	28.9	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 55	A	4	M-E	Row	Tim 1542 B	W	Tim 6560	F	7.75	41.5		Ros	34x5‡	34x5†	StM	.....	5925	180						
Concord BX	3600	Buda HTU	4¼x5½	28.9	L	Bus	F	Zen	G	Mon	Eis	.....	B-Li	.....	U	4	Spic	Per	.....	W	.....	F	9.25	37		Ros	36x4	36x8	Arc	Fir	5550	170						
Corbitt R-22	....	Cont L-4	4½x5½	32.4	L	McC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 50	U	4	Hart	Shel	Shel 3FA10	W	Shel W21	½	8.75	46.81		Ros	36x4	36x8	Smi	.....	6160	158						
Day Elder CN	....	Buda HTU	4¼x5½	28.9	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 51	U	4	Hart	Shel	Col 8513	W	Tim 6560	F	8.5	45.48		Gem	36x4	36x8	Van	Fir	4600	150						
Defiance H-2	....	Cont K-4	4⅛x5¼	27.2	L	Chic	F	Zen	V	Pier	Bos	Bos	Full	Full	U	4	Spic	Det	Col	R	L-M	½	9.	.....		Lav	36x4	36x8	St.M	.....	5140	157						
Defiance HL2	....	Cont K-4	4⅛x5¼	27.2	L	Chic	F	Zen	V	Pier	Bos	Bos	Full	Full	U	4	Spic	Det	Col	R	L-M	½	9.	.....		Lav	36x4	36x8	St.M	.....	5340	175						
Denby 35	2975	Cont K-4	4⅛x5¼	27.2	L	Lng	F	Zen	G	Sim	Eis	.....	Full	Full G-7	A	4	UP	Det	.....	I	Clark	D	8.15	45.3		Ros	36x4	36x8	Smi	Fir	4500	155						
Dependable E	2950	Buda HTU	4¼x5½	28.9	L	Lng	F	Zen	V	Mon	Spl	AuL	Full	Full G-9	A	4	Acm	Per	Shul 550	W	Wis 900C	½	8.6	40		Ros	36x4	36x7	Bim	Fir	5800	165						
Fageol	3900	Wau CU	4¾x5¾	30.6	L	.....	F	Zen	V	Wau	Spl	.....	B-Li	.....	...	7	Spic	Math	.....	W	.....	F	5.6	59.5		Ros	36x4	36x7	.....	.....	4600	150						
Forschler E	....	Cont C-4	4⅛x5¼	27.2	L	Own	FS	Zen	V	Dup	Bos	.....	Full	.....	...	4	Hart	Own	.....	W	.....	...	.....	.....		Ros	36x4	36x8	Smi	.....	5200	144						
F. W. D., B	4200	Wis A	4¾x5½	36.1	T	McC	F	Strm	G	Pier	Eis	.....	HS	Cott DAE	A	3	Bld	Tut	Own	B	Own	F	8.9	35.6		Ros	36x6	36x6	Sch	.....	6300	124						
Gramm-Pioneer 30	3300	Hin HA 500	4¼x5½	28.9	L	Own	F	Strm	G	Hin	Eis	NE	Own	Own	A	4	Own	Per	Own	W	Shel W-21	½	8.75	46.81		Ros	36x4	36x4†	Smi	Fir	6640	150						
Hurlburt B	3150	Buda HU	4¼x5½	28.9	L	Own	FS	Zen	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Per	.....	W	Tim	F	8.75	41.91		Ros	36x5	36x5†	.....	.....	5600	170						
International 61	....	Own	4¼x5	32.4	L	Own	FS	Ens	G	Own	Spl	Own	Own	.....	A	4	Own	.....	.....	I	.....	D	9	47.8		Own	.....	.....	Own	.....	4800	138						
Jumbo 30	....	Buda ETU	4¼x5½	28.9	L	Own	F	Zen	V	Sim	Eis	.....	Full	Full GU 8	U	4	Bld	SP	Shul 550	I	Clark 3-D	D	9	43.5		Jac	36x5‡	36x10‡	.....	Fir	5350	152						
Maccar H1	....	Wis UAU	4¼x6	28.9	L	Own	F	Strm	V	Pier	Eis	Bos	B-Li	B-Li 50	U	4	Spic	Mer	Tim 1544B	W	Tim 6560	F	8.5	45.4		Ros	36x4‡	36x5†	Day	.....	6300	162						
Moreland AX	3500	Cont L-4	4½x5½	32.5	L	Own	F	Strm	V	.....	Spl	.....	Own	Own 22 C 670	A	5	Pet	US	Tim 1542B	W	Tim 6560	F	6.8	40.93		Ros	36x5	36x10	Smi	.....	6535	174						
Moreland AC-Bus	4700	Cont L4	4½x5½	32.5	L	Own	F	Strm	V	.....	Spl	Opt	B-Li	B-Li	U	4	Pet	US	Tim 1550	W	Tim 6511	F	6	29		Ros	36x6*	36x6†	Bud	.....	5660	187						
Netco HL X	3700	Cont L4	4½x5½	32.4	L	E-M	F	Zen	V	Phar	Eis	.....	B-Li	B-Li 51	A	4	Spic	Math	Tim 1542B	W	Tim 6560	F	8.5	45.6		Gem	36x5	36x10	Smi	Opt	5825	170						
PatriotWashingtonSpec	3000	Hin 200	4½x5½	32.4	L	Own	F	Strm	V	.....	Spl	.....	Covt	Covt RAK 4	A	4	Ther	Mar	Shul 510	W	Wis Spec	½	9.67	45.93		Ros	36x5	36x8	Bim	Fir	5200	156						
Perfection D	2875	Cont K4	4⅛x5¼	27.2	L	Own	FS	Zen	V	Phar	Eis	Rm	B.B.	Own RU	U	4	Spic	Own	Tim 1630B	W	Tim 6560	F	8.5	54.1		Lav	36x4‡	36x8‡	Bim	Opt	5900	158						
Pierce Arrow XB	3500	Own	4 x5½	25.6	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	9.66	.....		.....	38x7*	42x9*	.....	.....	6280	150						
Pittsburgher C	3600	Own	4⅛x5¼	27.2	T	GO	F	Strm	V	.....	Bos	.....	B-Li	B-Li 50	U	4	Spic	IC	Vul 4F	W	Vul 4R	...	9.5	50.82		Ros	36x5	36x8	Smi	.....	6400	162						
Republic 19	....	Cont K4	4⅛x5¼	27.2	L	Own	F	Strm	V	Phar	Bos	.....	Full	.....	U	4	Spic	Math	.....	I	.....	D	8	38.4		Jac	36x4	36x8	Nor	Fir	4500	154						
Reynolds 23-B	3000	Hin 500	4¼x5½	28.9	L	Lng	F	Strm	V	Hin	Bos	Wes	B-Li	.....	A	4	Spic	Am	.....	W	.....	½	7.75	36.81		Ros	36x5	36x5†	Smi	Gdy	6500	174						
Reynolds 23-C (Bus)	3800	Hin 500	4¼x5½	28.9	L	Lng	F	Strm	V	Hin	Bos	Wes	B-Li	.....	U	3	Spic	Am	.....	R	.....	½	7	28.07		Ros	36x5	36x5†	Smi	Gdy	5800	188						
Rowe GSW3	4150	Wis TAU	4x 6	25.6	L	Fed	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 50	U	4	Spic	Shel	Shel D-370	W	Shel W-21	½	7.7	31		Ros	36x5	36x5†	Hoo	.....	5900	162						
Schacht	3800	Wis UAU	4¼x6	28.9	L	Own	F	Zen	G	Dup	Bos	.....	B.B.	Own	A	4	Spic	Nat	Own	W	Own	F	9.66	46		Own	36x5	36x5†	StM	.....	6700	156						
Schwarts 65	3550	Buda ETU	4¼x5½	28.9	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 55	A	4	M-E	Row	Tim 1542 B	W	Tim 6560	F	7.75	41.5		Ros	34x5‡	34 5†	StM	.....	5925	180						
Service 61	....	Buda EBU-I	4¼x5½	28.9	L	McC	F	Strm	V	.....	Eis	.....	B.B.	B-Li 50	A	4	M-E	Shel	Tim 1542	W	Tim 6560	F	7.75	41.5		Ros	36x4	36x8	Stn	Opt	5500	163						
Stoughton F	3150	.....	.....	.....	H	Own	F	Zen	G	Sim	Eis	.....	B-Li	B-Li 50	U	4	Ther	Own	Shel D-370	W	Shel W-21	½	8.75	46.8		Ros	36x5	36x5†	Bim	Gdy	5900	156						
Traffic 6000	2145	Cont N-4	3¾x5	22.5	L	Own	FS	Cart	G	.....	Bos	.....	Covt	Covt MUNC	U	3	Ther	Det	Own	I	Russ 6000I	D	8.8	32.2		Own	36x4	36x7	Opt	Fir	3900	135						
Transport 55	....	Cont C-2	4⅛x5¼	27.2	L	Mod	FS	Strm	G	Dup	Eis	Opt	Full	Full GU7	U	4	Bld	Det	Col 8500	I	Clark 2D	D	8.15	39.12		Jac	36x4	36x8	Mot	.....	5000	150						
Traylor D	3300	Buda HTU	4¼x5½	28.9	L	GO	F	Zen	G	Pier	Spl	.....	M-E	Own D-40	U	4	M-E	Mer	Shel D-343	W	Shel W-21	½	7.7	.....		Ros	36x4	36x8	Sch	.....	5850	150						
Ultimate BL	3850	Buda ETU	4¼x5½	28.9	L	Own	F	Strm	G	Pier	Eis	Bos	B-Li	B-Li 50	U	4	Spic	Shel	.....	W	.....	½	7.75	30.2		Ros	36x4	36x8	Jon	Fir	5590	178						
U. S., R	....	Own	4 x5¼	25.6	L	Lng	F	Strm	V	Own	Eis	Opt	B-Li	B-Li 35	A	4	Opt	Shel	Shel D-343	W	Shel W-21	½	8.7	41.5		Lav	36x4	36x4†	Sch	.....	5500	156						
Wichita RX	3200	Wau CU	4½x5¾	30.6	L	EM	F	Strm	G	Wau	Bos	NE	Own	B-Li 55	A	4	Ther	Det	Shel	W	Shel 21	½	Opt	.....		Ros	36x4	36x8	.....	.....	6000	160						
Winther 51	3175	Wis TAU	4 x6	25.6	L	Brm	F	Mas	V	.....	Eis	Wes	B.B.	B-Li 55	A	4	Bld	Math	Torb	I	Clark	D	8	40		Ros	36x4	36x4†	Own	.....	5300	150						
Witt-Will	3220	Cont K4	4½x5¼	27.2	L	Brm	F	Mas	V	Phar	Eis	.....	B.B.	B-Li 50	U	4	Bld	Math	Tim 1542	W	Tim 6560	F	9.25	40		Ros	36x4	36x10	.....	.....	5500	168						
3½ Ton																																					
Acason A-4	3350	Wau	4½x5¾	30.6	...	.....	...	Zen	V	Wau	Bos	.....	.....	Cott R	A	4	Bld	Det	Tim	W	Tim 6666	F	5.2	54.		Ros	36x5	36x12	Smi	.....	.....	180*						
Acme 90	....	Cont L-4	4½x5½	32.4	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott S	A	4	Bld	Det	Tim 1630B	W	Tim 6660	F	10.33	53.72		Ros	36x5	40x5†	Bim	.....	6983	168						
American LaFrance 3R	....	Own	4¼x6	28.9	L	Bus	F	Strm	G	Own	Spl	Wes	Own	Own	A	4	Own	Mer	Own	W	Own	...	7.8	42.5		Own	36x5	36x10†	Day	.....	.....	165						

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
3½ Ton—Con'd																															
Armleder KWB	4200	Buda YTU	4⅛x6	32.4	L	Own	F	Zen	G	Phar	Bos	Wes	B-Li	B-Li 50	U	4	Spic	Math	Tim 1630B	W	Tim 6666	F	10.33	55.37	Ros	36x5	36x5†	StM	.....	6900	186
Armleder KWC	4200	Cont E-4	4⅛x5½	32.4	L	Own	S	Zen	G	Phar	Bos	.....	B-Li	B-Li 50	U	4	Spic	Math	Tim 1630B	W	Tim 6666	F	10.33	55.37	Ros	36x5	36x5†	StM	.....	6900	186
Atterbury 22DX Short	4375	Cont L-4	4⅛x5½	32.4	L	Own	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 55	A	4	Spic	SP	Tim 1630B	W	Tim 6666	F	10.33	55.26	Gem	36x5	40x6†	Arc	.....	7500	174
Atterbury 22D Std	4275	Cont L-4	4⅛x5½	32.4	L	Own	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 55	A	4	Spic	SP	Tim 1630B	W	Tim 6666	F	10.33	55.26	Gem	36x5	40x6†	Arc	.....	7500	198
Atterbury 22D LWB	4375	Cont L-4	4⅛x5½	32.4	L	Own	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 55	A	4	Spic	SP	Tim 1630B	W	Tim 6666	F	10.33	49.99	Ros	36x5	40x5†	Sch	.....	6500	176
Available H	4175	Her MU-3	4⅛x5½	32.4	L	Chic	FS	Strm	V	Pier	Bos	.....	B-Li	B-Li 50	A	4	M-E	Tut	Tim	W	Tim 6666	F	8.75	46.8	Gem	36x5	36x5†	Smi	.....	6800	164
Brockway R	....	Cont L-4	4⅛x5½	32.4	L	Bus	F	Strm	V	Phar	Eis	.....	B-Li	B-Li 55	A	4	Spic	Mer	Tim 1630B	W	Tim 6666	F	9.33	50	Gem	36x5	36x10	Opt	.....	7200	170
Chicago C	....	Her MU-3	4⅛x5½	32.4	L	Brm	FS	Strm	G	Sim	Bos	.....	B-Li	B-Li 50-4	A	4	Pet	Math	Tim 1630	R	Huck 35	F	9.33	50	Gem	36x5	36x5†	.....	.....	.....	163
Clydesdale 6	....	Cont L-4	4⅛x5½	32.4	L	Own	F	Zen	V	Own	Bos	.....	B-Li	B-Li 50	A	4	Spic	Stan	Tim 1542B	W	Tim 6560	F	9.25	49.5	Ros	36x5	36x5†	.....	.....	.....	163
Dependable G	3550	Buda YTU	4⅛x6	32.4	L	Lng	F	Zen	V	Mon	Spl	AuL	Full	.....	A	4	Acm	Per	.....	W	.....	½	10	47.61	Ros	36x6	36x10	Bim	Fir	6000	165
Diamond T-K	....	Hin	4¼x5½	28.9	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	A	4	Spic	Math	.....	W	.....	F	8.8	44.36	Gem	36x5	36x5†	.....	.....	7250	170
Dixon	4070	Cont L-4	4⅛x5½	32.4	L	GO	FS	Zen	G	Pier	Bos	.....	Full	Full HU	U	4	Hart	SP	Tim 1630B	W	Tim 6666	F	Opt	Opt	Ros	36x5	36x10	Smi	.....	7100	160
Dorris K7	4400	Own	4¼x5½	28.9	H	McC	F	Strm	G	Own	Bos	Wes	Own	W-Gr T53	A	4	Spic	Row	Tim 1630	W	Tim 6660	F	10.33	51.5	Ros	36x5	36x10	Smi	Fir	6750	194
Duplex E (f. w. d.)	....	Buda ETU	4¼x5½	28.9	L	Lng	FS	Sheb	V	Dup	Eis	.....	B-Li	B-Li	A	4	Spic	Math	Tim 1630-B	I	Own	..	8	64	Woh	36x8*	36x8	Mot	Fir	6000	130
Gary KT	3950	Buda YTU	4⅛x6	32.4	L	Chic	F	Zen	V	McC	Eis	.....	B-Li	B-Li	A	4	Spic	Math	Tim 1630-B	W	Tim 6666	F	8.75	75.2	Own	36x5	40x5†	Own	.....	8100	162
G. M. C. K-71A	....	Own	4⅛x6	32.4	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	A	7	Own	Det	Tim 1630B	W	Tim 6666	F	8.75	75.2	Own	36x5	40x5†	Own	.....	7945	163
G. M. C. K-71B	....	Own	4⅛x6	32.4	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	A	7	Own	Det	Tim 1630B	W	Tim 6666	F	8.75	75.2	Own	36x5	40x5†	Own	.....	8070	187
Hal-Fur F	4000	Hin AA 200	4½x5½	32.4	H	GO	F	Zen	V	Hin	Bos	Wes	B.B.	Own 60	A	4	Pet	Mer	Tim 1630	W	Tim 6660	F	10.33	72	Gem	36x5	40x12	Smi	.....	6500	180
Harvey WHB	3950	Buda YTU	4⅛x6	32.4	L	Own	F	Strm	G	McC	Spl	.....	Full	B-Li 60	A	4	Spic	Bea	Shel 4FA20	W	Shel W-32	½	8.75	46.8	Ros	36x6	36x12	Smi	.....	7600	160
Hawkeye N	....	Buda YTU	4⅛x6	32.4	...	...	F	Zen	...	Sim	Eis	.....	Ful	Cott	A	4	.....	.....	.....	...	Clark	D	.....	.....	...	36x5†	36x10†	.....	.....	.....	180
Hendrickson M	3725	Buda EBU	4¼x5½	28.9	L	Chic	F	Strm	G	McC	Spl	.....	Full	Full G-7	A	4	Ther	Mar	Tim 1630	W	Tim 6666	F	10	49.6	Ros	36x5	36x5	Stn	.....	.....	Op
Hewitt-Ludlow	....	Buda HU	4¼x5½	28.9	L	Mod	F	Strm	V	.....	Bos	.....	B-Li	.....	U	4	Spic	.....	Shel	W	Shel	½	.....	.....	Ros	36x5‡	36x5†	Stn	.....	.....	150
Indiana 35	....	Own 40	4⅜x5½	30.6	L	McC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 55	A	4	Spic	Shel	Shel FA20	W	Shel W-31	½	10.2	54.84	Woh	36x5	36x10	Smi	.....	7050	160
Jackson B	3850	Cont E-4	4½x5½	32.4	L	Lng	FS	Strm	V	Pier	Eis	Dy	B.B.	.....	A	4	Spic	Per	.....	B	.....	F	9.2	43.49	Ros	36x7	36x7	.....	.....	7400	166
Jumbo 35	....	Buda YTU	4⅛x6	32.4	L	Own	F	Zen	G	Sim	Eis	.....	Full	Full GU-8	U	4	Spic	SP	Stn 507	I	Clark 3 D	D	9	43.5	Jac	36x5‡	36x10‡	.....	Fir	7510	165
Kalamazoo SK	4000	Wis UAU	4¼x6	28.9	L	GO	F	Strm	V	Pier	Bos	Dy	Full	Full	A	4	Bld	Shel	Shel 4FA20	W	Shel	½	10.25	61.5	Ros	36x5	36x12	Smi	.....	7520	100
Kelly-Springfield K-40	3900	Own	4½x6½	32.4	T	Lng	F	Zen	G	Pier	Eis	Del	B.B.	Covt	A	3	.....	.....	Per	W	Own	C	10.49	31.69	Gem	36x5	40x5†	StM	.....	7730	Op
Kelly-Springfield K-41	3900	Own	4½x6½	32.4	T	Lng	F	Zen	G	Pier	Eis	Del	B.B.	Covt	A	4	Pet	Per	Own	I	Clark	D	10	50.7	Gem	36x6	36x10	Cla	.....	7800	Op
Kelly-Springfield K-42	3900	Own	4½x6½	32.4	T	Lng	F	Zen	G	Pier	Eis	Del	B.B.	Covt	A	4	Pet	Per	Own	W	Stn	½	10.25	51.97	Gem	36x5	40x5	Smi	.....	8500	Op
Kenworth L	....	Buda YTU	4⅛x6	32.4	L	Idl	F	Strm	V	Mon	Bos	.....	B.B.	Cott S	A	4	Bld	Tut	Shel W-32	W	Shel W-32	..	10.25	53.3	Ros	36x5	40x12	Smi	.....	8050	170
Larrabee L-4	4000	Cont L-4	4½x5½	32.4	L	R-T	S	Zen	G	Phar	Bos	.....	B-Li	B-Li 55	A	4	Spic	Mer	Shel 4FA20	W	Shel W-31	½	10.25	55	Ros	36x5	36x10	Smi	.....	7600	186
Mack AC	4950	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	7.54	48.37	Own	36x5	40x5†	.....	.....	9200	Op
Master 51	4250	Buda YTU	4¼x6	32.4	L	Chic	F	Strm	V	Pier	Eis	.....	B-Li	B-Li	A	4	Spic	Det	Tim 1630	W	Tim 6666	F	Opt	Opt	Ros	36x5	40x10	Smi	.....	8100	158
Menominee G	3800	Wis VAU	4⅛x6	32.4	L	Own	FS	Strm	G	Mon	Eis	Opt	Det	Cott R	A	4	Spic	Tut	Cont	W	Tim	F	10.3	53.71	Ros	36x5	36x10	Smi	Fir	6750	160
Nelson & LeMoon G 4	....	Cont L-4	4½x5½	32.4	L	Chic	F	Strm	G	Phar	Bos	Bos	B-Li	B-Li 50	U	4	Own	GC	Tim 1630	W	Tim 6666	F	8.7	42	Ros	36x5	36x5†	StM	Gdy	6000	Op
Noble E-71	3850	Buda YTU	4½x6	32.4	L	Chic	F	Strm	V	Pier	Eis	Wes	Full	W Gr T 53	A	4	M-E	.....	Shel 4FA20	W	Shel W-30	½	8.75	44	Lav	36x5	36x10	Bim	Fir	7200	182
Northway B3	4200	Own	4 x6	25.6	H	GO	F	Strm	V	Pier	Wag	Bj	Full	Full GU8	U	4	Spic	Per	Shel 4FA20	W	Shel W30	½	10	49.2	Ros	36x5	40x5†	Cla	Fir	7700	Op
Ogden F	....	Cont L-4	4½x5½	32.4	L	Chic	F	Zen	G	Pier	Spl	.....	B-Li	.....	A	4	M-E	Tut	.....	W	.....	F	10.33	.....	Ros	36x5	40x10	Stn	.....	7300	178
O.K	3975	Buda YTU	4⅛x6	32.4	L	R-T	FS	Zen	V	Pier	Eis	.....	Full	.....	A	4	Hart	Cham	.....	W	.....	½	10	60	Ros	36x5*	36x5†	Bim	.....	6350	164
Old Reliable C	4250	Wis VAU	4⅛x6	32.4	L	Chic	F	Strm	V	Phar	Bos	.....	Full	Full H	A	4	Pet	Shel	Shel 4FA20	W	Shel W-32	½	8.75	55.1	Ros	36x5	36x12	Sch	.....	7000	Op
Oneida D	4050	Hin 200	4½x5½	33.5	L	Mod	F	Strm	V	Hin	Apo	.....	Full	.....	A	4	Pet	Math	.....	W	.....	F	10.33	49.6	Ros	36x5	36x10	Smi	.....	7700	170
Parker J-20	4300	Wis VAU	4⅛x6	32.4	L	Own	F	Strm	V	Pier	Eis	Wes	B-Li	Full H	A	4	Bld	.....	Shul 610	W	Own	F	8.75	43.6	Ros	36x5	40x5†	Smi	.....	6550	160
Perfection E	2975	Cont K-4	4⅛x5¼	27.2	L	Own	FS	Zen	V	Phar	Eis	Rm	B.B.	Own RU	A	4	Spic	Own	Tim 1630B	W	Tim 6560	F	9.5	63	Lav	38x7	42x9	Bim	Fir	5700	138
Pittsburgher D	3800	Own	4⅛x5¼	27.2	T	GO	F	Strm	V	.....	Bos	.....	B-Li	B-Li 50	U	4	Pet	Row	Vul 4F	W	Vul 4R	..	9.5	50.82	Ros	36x5	36x10	Smi	.....	6600	162
Power C	....	Hin HA-200	4½x5½	32.4	L	Mod	F	Strm	G	Hin	Eis	Wes	B-Li	B-Li	A	4	Vul 4R	..	10	48	Ros	36x5†	36x10	StM	.....	6800	172
Rainier R-25	4400	Cont L-4	4½x5½	32.4	L	EM	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1632B	W	Tim 6666	F	10.33	55.26	Ros	36x5	36x5†	Jon	.....	7400	160
Sandow	3695	Cont E-4	4½x5½	32.4	L	Chic	FS	Strm	G	Mon	Bos	.....	B-Li	B-Li 50	A	4	Spic	.....	Tim 6660	W	Tim 6660	..	10.25	41.25	Ros	.....	.....	.....	.....	6800	172
Sanford W35B	....	Cont E-4	4½x5½	32.4	L	McC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 50	A	4	Spic	Shel	Shel 4FA10	W	Shel 31	½	8.7	34.8	Ros	36x5	36x5†	Hoo	Fir	6750	174
Sanford W-35D	....	Cont E-4	4½x5½	32.4	L	McC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 55	A	4	Spic	Shel	Shel 4FA10	W	Shel 31	½	8.7	34.8	Ros	36x5	36x5†	Hoo	Fir	6710	156
Selden Unit 70	4175	Cont L4	4½x5½	32.4	L	Lng	F	Strm	G	Phar	Eis	.....	B-Li	B-Li 55	A	4	Spic	Per	Tim 1650 B	W	Tim 6666	F	8.75	46.81	Gem	36x5	36x10	Stn	.....	7200	165
Selden Unit 52	4850	Cont L-4	4½x5½	32.4	L	Lng	F	Zen	V	Phar	Eis	NE	B-Li	B-Li	A	4	Spic	SS	Tim 1550	W	Tim 6511	F	7.75	31	Gem	36x5	36x10	Arc	Opt	7200	195
Selden Unit 53	3550	Cont L-4	4½x5½	32.4	L	Lng	F	Strm	G	Phar	Eis	.....	B-Li	B-Li 51	A	4	Spic	Det	Tim 1544 B	W	Tim 6560	F	8.5	45.4	Gem	36x4	36x7	Stn	Opt	6220	154
Service 72	....	Buda EBU-I	4¼x5½	28.9	L	McC	F	Strm	V	.....	Eis	.....	B.B.	B-Li 60	A	4	Spic	Shel	Tim 1630	W	Tim 6666	F	8.75	42.35	Ros	36x5	36x10	Stn	.....	7610	173
Signal M	....	Cont L-4	4½x5½	32.4	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	12	58.08	Ros	36x5	40x10	StM	.....	7350	168
Signal ML	....	Cont L-4	4½x5½	32.4	L	Lng	FS	Strm	G	Sim	Fis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	12	58.08	Ros	36x5	40x10	StM	.....	7700	204
Standard 3½-5-K	3645	Cont L-4	4½x5½	32.4	L	Lng	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 55	A	4	Spic	Am	Tim 1630B	W	Tim 6666	F	10.3	55.1	Gem	36x5	36x12	Day	.....	7485	160
Standard 3½-5-KS	3725	Cont L-4	4½x5½	32.4	L	Lng	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 60	A	4	Spic	Am	Tim 1630B	W	Tim 6666	F	10.3	55.1	Gem	36x5	36x12	Day	.....	7519	160
Sterling	4750	Own	4½x6¼	32.4	L	Own	F	Zen	V	Wau	Eis	.....	H-S	Own	A	3	Spic	Math	Tim 1630B	W	Tim 6666	F	8.75	39.5	Ros	36x5	40x5†	Pru	.....	7925	162
Stewart 10-X	3440	Buda YTU	4⅛x6	32	L	Bus	F	Zen	V	Pier	Eis	.....	Full	.....	U	3	Spic	Det	.....	I	.....	D	10	48.01	Ros	36x5†	36x5†	Cla	Fir	....	165
Super Truck 70	4100	Wis	4¼x6	28.9	L	Chic	F	Zen	G	Sim	Bos	.....	Full	Full H	A	4	Spic	Shel	.....	W	Shel W-31	½	10.25	49.2	Ros	36x5	40x5†	Smi	.....	7500	164
Titan	3600	Buda EBU	4¼x5½	28.9	L	....	F	Zen	G	Phar	Eis	.....	B.-Li	B-Li	A	4	Spic	Math	.....	I	.....	D	9	48	Lav	36x5	40x10	Smi	.....	6200	156
Tower G	3175	Cont L-4	4½x5½	32.4	L	Own	S	Zen	...	Pier	Eis	.....	Full	Full GU-7	U	4	Spic	Det	Tim 1630B	W	Tim 6666	F	10.33	50	Ros	36x5	36x5†	Pru	Gdy	7310	165
Transport 61	....	Buda ETU	4¼x5½	28.9	L	Mod	F	Zen	G	Dup	Eis	Opt	Full	Full GU 7	U	4	Bld	Det	Col 8500	I	Clark 2F	D	8.15	39.12	Jac	36x4	36x8	Mot	.....	5600	150
Twin City	3500	Own	4¼x6	28.9	H	Spli	F	Strm	V	Own	Bos	.....	B.B.	Full G5	A	4	Spic	Math	Tim 1630B	W	Tim 6652	..	10.33	49.58	Ros	36x5	40x5†	Cla	.....	6800	168
United C	....	Buda ETU	4¼x5½	28.9	L	Mod	F	Zen	...	.....	Eis	.....	Full	Full	A	4	Spic	Shel	.....	W	Shel	D	10.25	48.1	Lav	36x5	40x5†	Cla	.....	6700	157
Ward La France 4A	4290	.....	4⅛x6¾	32.4	L	Own	F	Strm	G	.....	Bos	.....	B-Li	B-Li 60	A	4	Spic	Row	Tim 1630B	W	Tim 6666	F	7.8	41.73	Ros	36x5	36x5†	Smi	.....	7750	162
Watson N	3840	Cont E-4	4½x5½	32.4	L	RT	FS	Strm	G	Pier	Sim	.....	B-Li	.....	A	4	Spic	Shel	.....	W	.....	½	9	43.56	Gem	36x5	36x10	C&M	.....	7270	174
White 40	4200	Own GR	4¼x5¾	28.9	L	.....	F	Zen	V	Own	.....	.....	Own	Own GMC	U	4	Own	.....	Own	R	Own	F	11.7	48.26	Own	36x5	40x5†	.....	.....	7300	174
Wilcox E	3950	Buda YTU	4½x6	32.4	L	.....	S	Strm	G	Dup	Bos	.....	Own	.....	A	4	Own	Shel	.....	R	.....	½	10	45.1	Own	36x5	36x5†	.....	.....	6600	147
Wilson G	3685	Cont	4½x5½	28.9	L	Lng	FS	Hol	V	Pier	Eis	.....	B.B.	Cott R	A	4	K-B	Per	Tim 1630	W	Tim 6660	F	10.3	45.1	Ros	36x5	36x5†	Smi	.....	6800	160
Winter & Hirsch L	4200	Cont L-4	4½x5½	32.4	L	Chic	F	Strm	V	Phar	Bos	.....	B-Li	B-Li 51	A	4	Spic	Tut	Tim 1630	W	Tim 6666	F	10.3	55.3	Ros	36x5	36x10	Bim	.....	6500	178
Winther 70	3650	Wis UAU	4¼x6	25.6	L	Brm	F	Mas	V	.....	Eis	Wes	B.B.	B-Li 55	A	4	Bld	Math	Tim	I	Clark	D	9	36	Ros	36x5	36x5†	Cla	Fir	6400	150
Wisconsin (Six-Wheel)	4600	Cont B-5	4¼x6	32.4	L	Chic	F	Strm	V	Phar	Eis	Bos	B-Li	B-Li 55	U	4	Pet	Det	.....	W	Wis	½	8.25	45	Lav	34x7	34x7	Bim	Gdy	7000	158

4 Ton

Acme 90L	....	Cont B-5	4¾x6	36.1	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott S	A	4	Bld	Det	Tim 1630B	W	Tim 6660	F	8.75	45.5	Ros	36x5	40x5†	Bim	.....	8160	177
American	4275	Wis	4¼x6	28.9	L	GO	F	Strm	G	Pier	Apo	.....	Det	Cott R	A	4	Acm	SP	Sav 40-O	W	Wis 900	½	10	.....	Lav	36x5	36x5†	Smi	.....	7000	158
Autocar B	4350	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7400	156
Autocar Y	4200	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7200	120
Bessemer K2	3695	Cont E-7	4½x5½	32.4	L	Spli	FS	Strm	G	Pier	Eis	.....	B.B.	B-Li 60	A	4	Spic	Per	Shul 610	I	Torb E	D	10	49.5	Ros	36x5	36x10	Smi	Fir	7250	175
Clinton 90	4160	Buda YTU	4½x6	32.4	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 55	A	4	M-E	Row	Tim 1632 B	W	Tim 6666	F	8.75	46.8	Ros	36x6‡	36x6†	StM	.....	7410	190
Corbitt A22	....	Cont L-4	4½x5½	32.4	L	McC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 50	U	4	Hart	Shel	Shel 4FA20	W	Shel W-32	½	11.75	62.86	Ros	36x5	36x10	Smi	.....	7370	178
Day-Elder FN	.....	Cont L-4	4½x5½	32.4	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 51	U	4	Hart	Shel	Col 8513	W	Tim 6666	F	8.75	46.81	Gem	36x5	36x5†	Van	Fir	5600	165
Denby 27	3695	Cont L-4	4½x5½	32.4	L	Lng	F	Zen	G	Sim	Eis	.....	Full	Full H	A	4	Spic	Det	.....	I	.....	D	10	49.9	Ros	36x5	36x6†	Smi	Fir	7020	170
Double Drive B	4000	Buda YTU	4½x6	32.4	L	Hoo	F	Zen	V	Pier	Spl	Opt	B.B.	Own DDT	A	4	Own	Tut	Own FDD	W	Own RDD	½	9.75	48.75	Ros	36x6‡	36x6‡	Stn	Opt	7350	144
Fageol	5000	Wau DU	4½x6¼	32.4	L	.....	F	Zen	V	Wau	Spl	.....	B-Li	.....	...	7	Spic	Math	.....	W	.....	F	7.4	79	Ros	36x5	36x5	.....	.....	7300	172
Federal WL	....	Cont L-4	4½x5½	32.4	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	W-Gr	A	4	Spic	Math	Tim 1630B	W	Tim 6760	F	10.33	51.56	Gem	36x5	36x5†	Smi	Fir	7000	156
Garford 77D	4200	Buda YTU	4½x6	32.4	L	Own	F	Strm	G	Sim	Spl	.....	Own	.....	A	4	Spic	Per	Tim 1630B	W	Tim 6666	F	10.33	59.5	Ros	36x5	36x5†	Smi	.....	7700	162
Gotfredson	3975	Buda YTU	4½x6	32.4	L	McC	F	Zen	V	Phar	Bos	.....	B-Li	B-Li 55	A	4	Spic	Am	Tim 1632B	W	Tim 6666	F	10.33	55.3	Gem	34x5	36x12	Day	.....	8400	160
Gramm-Pioneer 40	3850	Hin HA200	4½x5½	32.4	L	Own	F	Strm	G	Hin	Eis	NE	Own	Own	A	4	Own	Per	Shel	W	Shel W31	½	10.25	50.6	Ros	36x5	36x5†	Smi	.....	7980	156
Hurlburt C	4150	Buda YTU	4½x6	32.4	L	Own	FS	Zen	G	Sim	Eis	.....	B-Li	Full H	A	4	Spic	Per	Tim 1730	W	Tim 6760	F	8.8	49.9	Ros	36x5	36x6†	Wau	.....	7300	Op
Kissel Heavy Duty	3675	Own 14000	4¼x5½	28.9	L	McC	S	Strm	V	Pier	Eis	.....	W-Gr	.....	A	4	Spic	Shel	.....	W	.....	½	11.7	58.6	Ros	36x5	36x12	Smi	.....	7200	168
Maccar M2	....	Wis YAU	4½x6	32.4	L	Own	F	Strm	V	Pier	Eis	Bos	B-Li	B-Li 55	A	4	Spic	Mer	Tim 1632B	W	Tim 6666	F	8.75	46.8	Ros	36x5‡	36x6†	Day	.....	7300	174
Perfection E-4½	4500	Cont B5	4¾x6	36.1	L	Mod	FS	Zen	V	Mon	Eis	.....	B.B.	Full H	A	4	Spic	Stan	Cont 1803	R	Huck 50	...	9.25	.....	Lav	36x5	40x14	Own	.....	8250	...
Pierce Arrow WC	4600	Own	4½x6¾	32.4	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	8.	.....	...	36:5	36x5†	.....	.....	8420	162
Republic 20	....	Cont L-4	4½x5½	32.4	L	Own	F	Strm	V	Phar	Bos	.....	Full	.....	U	4	Spic	Math	.....	I	.....	D	10.25	49.25	Jac	36x5	36x10	Smi	Fir	6700	165
Rowe HW	4500	Wis UAU	4¼x6	28.9	L	Fed	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 55	A	4	Spic	Shel	Shel 4FA20	W	Snel W-31	½	8.7	35	Ros	36x5	36x6†	Hoo	.....	6370	156
Schacht	4400	Wis VAU	4½x6	32.4	L	Own	F	Zen	G	Dup	Bos	.....	B.B.	Own	A	4	Spic	Nat	Own	W	Tim 6666	F	10.66	66.5	Own	36x5	40x5†	StM	.....	7800	168
Schwartz 90	4160	Buda YTU	4½x6	32.4	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 55	A	4	M-E	Row	Tim 1632 B	W	Tim 6666	F	8.75	46.8	Ros	36x6‡	36x6†	StM	.....	8250	190
Service 81	....	Buda YBU-I	4½x6	32.4	L	Lng	F	Strm	V	.....	Eis	.....	B.B.	B-Li 60	A	4	M-E	Shel	Tim 1630	W	Tim 6666	F	7.8	41.66	Ros	36x5	36x10	Stn	Opt	7810	173
Union H	3975	Wis VAU	4½x6	32.4	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full H	U	4	UP	Math	Shul 650	I	Torb E-1	D	10.25	49.2	Ros	36x6	36x10	Smi	.....	7700	174
Union HW	3975	Wis VAU	4½x6	32.4	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full HUI	A	4	UP	Math	Shul 650	R	Walk 5A	...	10.5	63	Ros	36x6	40x12	Smi	.....	7750	174
U. S., S	....	Own	4½x5½	32.4	L	Lng	F	Strm	V	Own	Eis	Opt	B-Li	B-Li 50	A	4	Opt	Shel	Shel 4FA20	W	Shel W-31	½	10.25	49.6	Lav	36x5	36x5†	Sch	.....	7600	168
Wichita O	3500	Wau DU	4½x6¼	32.4	L	E-M	F	Strm	G	Wau	Bos	Own	Own	Own	A	4	Ther	Det	Shel	W	Shel W-30	½	Opt	Opt	Ros	36x5	36x5†	Smi	.....	6500	165

5 Ton

Acason M	4350	Wau EU	5 x6¼	40	L	.....	FS	Zen	V	Wau	Bos	.....	Det	Cott S	A	4	Bld	Det	Tim 1730-B	W	Tim 6760	F	10.25	53.3	Ros	36x6	40x6†	Smi	Opt	8970	187
Acme 125	....	Cont B-5	4¾x6	36.1	L	GO	FS	Rayf	V	Dup	Eis	Del	B.B.	Cott T	A	4	Bld	Det	Tim 1730B	W	Tim 6760	F	11.66	60.63	Ros	36x6	40x6†	Smi	.....	8976	180
American	4500	Wis	4½x6	32.4	L	GO	F	Strm	G	Pier	Apo	.....	Det	Cott R	A	4	Acm	SP	Sav 50-O	W	ThomDWM	F	10	.....	Lav	36x5	36x12	Ind	.....	8000	176
American LaFrance 5R	....	Own	4¾x6	36.1	L	Bu	FS	Strm	G	Own	Spl	Wes	Own	Own	A	4	Own	Mer	Own	W	Own	...	10.	54.5	Own	36x6	40x6†	.....	.....	.....	165*
Atterbury 8E	4975	Cont B-2	4¾x6	36.1	L	Own	F	Zen	V	Con	Eis	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1730B	W	Tim 6760	F	11.6	62.38	Gem	36x6	40x7†	Stn	.....	9496	167
Atterbury 8E-LWB	5125	Cont B-2	4¾x	36.1	L	Own	F	Zen	V	Con	Eis	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1730B	W	Tim 6760	F	11.6	62.38	Gem	36x6	40x7†	Stn	.....	9816	192
Autocar B	4350	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7400	156
Autocar Y	4200	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7200	120
Available H	5375	Her T-3	5 x6	40	L	Chic	FS	Strm	V	Pier	Bos	.....	B-Li	B-Li 60	A	4	M-E	Tut	Tim	W	Tim 6760	F	11.3	60.65	Ros	36x6	40x12	Smi	.....	9500	190
Brockway T	....	Cont B-5	4¾x6	36.1	L	Bus	F	Strm	V	Phar	Eis	.....	B-Li	B-Li 60	A	4	Spic	Mer	Tim 1730B	W	Tim 6760	F	10.25	54.8	Gem	36x6	40x14†	Smi	.....	8800	174
Chicago D5	....	Her MU-3	4½x5½	32.4	L	Brm	F	Strm	G	Sim	Bos	.....	B-Li	B-Li 51-4	A	4	Pet	Math	Tim 1730	R	Huck 50	F	10.33	63.1	Gem	36x6	40x6†	Opt	.....	8500	157
Clinton 120L	4890	Buda BTU	5 x6½	40	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 60	A	4	M-E	Row	Tim 1732 B	W	Tim 6760	F	8.80	47.1	Ros	36x6‡	36x7†	StM	.....	9400	204
Clydesdale 4	....	Cont B-5	4¾x6	36.1	L	Own	F	Zen	V	Own	Bos	.....	B-Li	B-Li 60	A	4	Spic	Stan	Tim 1630B	W	Tim 6666	F	10.3	55.3	Ros	36x6	40x6†	.....	.....	.....	177
Corbitt AA-22	....	Cont B-5	4¾x6	36.1	L	McC	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 60	A	4	Hart	Shel	Shel 4FA20	W	Shel W-51	½	10.25	49.6	Ros	36x6	40x6†	Smi	.....	9410	178
Day-Elder EN	....	Buda YTU	4½x6	32.4	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 60	A	4	Hart	Shel	Tim 1732B	W	Tim 6760	F	10.25	54.84	Gem	36x5	40x6†	Smi	Fir	8400	170
Denby 210	4295	Cont B-5	4¾x6	36.1	L	Lng	F	Zen	G	Sim	Eis	.....	Full	Full H	A	4	Spic	Det	.....	I	Clark	D	12.5	62.7	Ros	36x6	40x6†	Cla	Fir	8590	170
Diamond T-EL	....	Hin	4½x5½	32.4	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	A	4	Spic	Math	.....	W	.....	F	11.66	59.11	Gem	36x6	40x6†	.....	.....	8625	180
Diamond T S	.....	.....	4¾x6	36.1	L	GO	F	Strm	V	Own	Bos	.....	B-Li	.....	A	4	Spic	Math	.....	W	.....	F	11.66	56.43	Gem	36x6	40x6†	.....	.....	8750	180
Dixon	4490	Cont L-4	4½x5½	32.4	L	GO	FS	Zen	G	Pier	Bos	.....	Full	Full GU-8	U	4	Hart	IC	Vul 4F	W	Tim 6560	F	Opt	Opt	Ros	36x5	36x12	Smi	.....	7800	160
D-Olt B-5	4850	Mid 400	4½x6	32.4	H	GO	F	Zen	V	Sim	RBo	.....	B-Li	.....	A	4	Spic	SP	.....	W	.....	...	11.23	69	Ros	36x6	40x12	.....	.....	8600	168
Fageol	5700	WAU DU	4½x6¼	32.4	L	.....	F	Zen	V	Wau	Spl	.....	B-Li	.....	...	7	Spic	Math	.....	W	.....	F	8.4	89	Ros	36x6	40x6†	Stn	.....	8300	172
Federal X-2	....	Cont B-5	4¾x6	36.1	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	W-Gr	A	4	Spic	.....	.....	W	.....	F	10.25	60	Gem	36x6	40x6†	.....	.....	8700	163
Garford 68 D	5000	Buda BTU	5 x6½	40	L	Own	F	Strm	G	Sim	Spl	.....	Own	Own	A	4	Spic	Per	Tim 1730B	W	Tim 6760	F	8.8	.....	Ros	36x6	40x6†	Smi	.....	9350	162
Gary M	4650	Buda BTU	5 x6½	40	L	Chic	F	Zen	V	McC	Eis	.....	B-Li	B-Li	A	4	Spic	Math	Tim 1720-B	W	Tim 6760	F	11.66	56.4	Ros	36x6	40x12	Day	.....	9250	182
G.M.C K-101A	....	Own	4½x6	32.4	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	A	7	Own	Det	Tim 1630	W	Tim 6760	F	10	86	Own	36x5	40x6†	Own	.....	8645	163
G.M.C. 101B	....	Own	4½x6	32.4	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	A	7	Own	Det	Tim 1630	W	Tim 6760	F	10	86	Own	36x5	40x6†	Own	.....	8770	187
Gotfredson	4800	Buda BTU	5 x6½	40	L	McC	F	Zen	V	Phar	Bos	.....	B-Li	B-Li 60	A	4	Spic	Am	Tim 1732B	W	Tim 6760	F	10.25	54.8	Gem	36x6	40x14	Day	.....	9700	166
Gramm-Pioneer 50-60	4450	Cont	4¾x6	36.1	L	Own	F	Strm	G	Con	Eis	NE	Own	Own	A	4	Own	Per	Shel	W	Shel W-51	½	10.5	62	Ros	36x6	40x6†	Smi	.....	9700	168
Hendrickson K	4725	Wau EU	5 x6¼	40	L	Chic	F	Strm	G	Wau	Spl	.....	Full	Own	...	4	Ther	Tut	.....	W	.....	F	12	57	Ros	36x6	40x6†	Stn	.....	....	Op
Hewitt-Ludlow	....	Buda	4½x6	33.5	L	Mod	F	Strm	V	.....	Bos	.....	B-Li	.....	...	..	Spic	.....	.....	D	.....	...	.....	.....	Ros	36x6	40x6†	.....	.....	.....	170
Indiana 51	....	Wau EU	5 x6¼	40	L	McC	F	Strm	G	Wau	Eis	.....	B.B.	B-Li 60	A	4	Spic	Shel	Shel 4FA20	W	Shel W-51	½	10.25	54.84	Woh	36x5	40x12	Smi	.....	9000	170
International 101	....	Own	4¾x5	28.9	H	Own	FS	Ens	G	Own	Spl	Own	Own	.....	A	4	Own	Shel	.....	I	.....	D	11	58.4	Own	.....	.....	Own	.....	6900	160
Jumbo 50	....	Buda YTU	4½x6	32.4	L	Own	F	Zen	G	Sim	Eis	.....	Full	Full GU 8	U	4	Spic	SP	Stn 507	I	Clark5 D	D	12.5	60	Jac	36x6‡	40x12‡	.....	Fir	8070	165
Kalamazoo OK	4550	Wis VAU	4½x6	32.4	L	GO	F	Strm	V	Pier	Bos	Dy	Full	Full	A	4	Bld	Shel	Shel 4FA20	W	Shel	½	13	78	Ros	36x6	40x6*	Smi	.....	8470	160
Kelly-Springfield K50	4400	Own	4½x6½	32.4	T	Lng	F	Zen	G	Pier	Eis	Del	B.B.	.....	A	4	.....	Per	.....	C	.....	D	12.24	42.57	Gem	36x6	40x6†	Smi	.....	8875	Op
Maccar G1	....	Wis RBU	5 x6	40	L	Own	F	Strm	V	Pier	Eis	Bos	B-Li	B-Li 60	A	4	Spic	Mer	Tim 1732B	W	Tim 6760	F	10.2	54.8	Ros	36x6‡	40x6†	Day	.....	8975	186
MacDonald O	5000	Buda WTU	3¾x5½	22.5	L	Own	F	Zen	V	Sim	Spi	.....	B-Li	B-Li	U	4	Spic	Mer	Own	I	Own	D	13.7	73.29	Own	36x6	Opt	Opt	.....	.....	Opt
Mack AC	5500	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	8.31	53.31	Own	36x6	40x6†	.....	.....	9400	Op
Master 61	....	Buda YTU	4½x6	32.4	L	Chic	F	Zen	V	Pier	Eis	.....	B-Li	B-Li	A	4	Spic	Det	Tim 1630	W	Tim 6760	F	Opt	Opt	Ros	36x5	40x12	Smi	.....	8200	158
Menominee J3	4850	Wis RAU	4¾x6	36.1	L	Own	FS	Strm	G	Mon	Eis	Opt	Det	Cott S	A	4	Spic	Tut	Cont	W	Tim	F	11.6	61.43	Ros	36x6	40x12	Smi	Fir	8250	160
Moreland RX	4600	Cont B-5	4¾x6	36.1	L	Own	F	Strm	V	Con	Spl	.....	Own	Own 22H670	A	5	Pet	US	Tim 1630B	W	Tim 6666	F	8.75	52.67	Ros	36x6	40x6	Smi	.....	8180	192
Nelson & LeMoon G	....	Cont B-2	4¾x6	36.1	L	Chic	F	Strm	G	Con	Bos	Ros	B-Li	B-Li 60	A	4	Own	GC	Tim 1730	W	Tim 6766	F	11.66	.....	Ros	36x6	40x6†	StM	.....	8000	Op
Ogden G	.....	Cont B-2	4¾x6	36.1	L	Chic	F	Strm	G	Con	Spl	.....	B-Li	.....	A	4	M-E	Tut	.....	I	.....	...	10.33	.....	Ros	36x6	40x12	Wal	.....	8600	175
Old Reliable D	4500	Wis RAU	4¾x6	36.1	L	Chic	F	Strm	V	Phar	Apo	.....	Own	B-Li 60	A	4	Pet	Shel	Shel 4FA20	W	Shel W-51	½	10.25	54.8	Ros	36x6	40x6†	Sch	.....	8000	165
Oneida E	4725	Hin 1600	4½x5½	33.5	H	Mod	F	Strm	V	Hin	Apo	.....	Full	.....	A	4	Pet	Math	.....	W	.....	F	11.66	70	Ros	36x6	40x12	Smi	.....	9400	180
Parker M20	5250	Wis RBU	5 x6	40	L	Own	F	Strm	V	Sim	Eis	Wes	B-Li	Full H	A	4	Bld	Tut	Shul 650	W	Tim 6760	F	10.25	51.1	Ros	36x6	40x6†	Smi	.....	8400	160
Perfection EA	4500	Cont B5	4¾x6	36.1	L	Mod	FS	Zen	V	Mon	Eis	.....	B.B.	Full H	A	4	Spic	Stan	Cont 1803	R	Huck 50	...	9.25	.....	Lav	36x6	40x14	Own	.....	8250	...
Pierce Arrow WD	4700	Own	4½x6¾	32.4	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	8.	.....	...	36x6‡	36x7†	.....	.....	8420	162
Rowe FW	4850	Wis VAU	4½x6	32.4	L	Fed	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 60	A	4	Spic	Shel	Shel 5A30	W	Shel W-51	½	10.25	40.7	Ros	36x6	40x6†	Hoo	.....	8300	169
Sandow	4325	Cont B-5	4½x5½	32.4	L	Chic	FS	Strm	G	Mon	Bos	.....	B-Li	B-Li 60	A	4	Spic	.....	Tim 1730	W	Tim 6760	½	11	46.6	Ros	.....	.....	.....	.....	7800	175
Sanford W50	....	Cont E-5	4½x6	32.4	L	McC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 60	A	4	Spic	Shel	Shel 4FA10	W	Shel 51	½	10.75	52.03	Ros	36x5	40x6†	Hoo	Fir	8700	174
Schacht	4600	Wis VAU	4½x6	32.4	L	Own	F	Zen	G	Dup	Bos	.....	B.B.	Own	A	4	Spic	Nat	Own	W	Own	F	14	66.5	Own	36x5	40x6†	StM	.....	8200	168

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
5 Ton—Con'd																															
Schwartz 120 L	4890	Buda BTU	5 x6½	40	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 60	A	4	M-E	Row	Tim 1732B	W	Tim 6760	F	8.80	47.1	Ros	36x6‡	36x7†	StM	.....	9400	204
Selden Unit 90	4950	Cont B-5	4¾x6	36.1	L	Lng	F	Strm	G	Phar	Eis	.....	Det	B-Li 60	A	4	Spic	SP	Tim 1730B	W	Tim 6760	F	10.25	55	Gem	36x6	40x12	Stn	.....	9650	164
Selden 73	4475	Cont B-5	4¾x6	36.1	L	Lng	F	Strm	G	Phar	Eis	.....	Det	B-Li 55	A	4	Spic	SP	Tim 1630B	W	Tim 6666	F	8.75	52	Gem	36x5	36x10	Stn	.....	7720	168
Signal R	....	Cont B-5	4¾x6	36.1	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	11.6	56.43	Ros	36x6	40x12	Smi	Gdy	9500	180
Sterling	5400	Own	5 x6¼	40	L	Own	F	Zen	V	Wau	Eis	.....	H-S	Own	A	3	Spic	Math	Tim 1730B	W	Tim 6760	F	8.8	39.69	Ros	36x6	40x6†	Pru	.....	9325	168
Sterling-Chain St. EHD	6000	Own	5 x6¼	40	L	Own	F	Zen	V	Wau	Eis	.....	H-S	Own	A	6	M-E	Math	Tim 1730B	C	Own	D	7.26	44	Ros	36x6	40x6†	Smi	.....	9825	174
Sterling-Chain St. ELD	5490	Own	4½x6¼	32.4	L	Own	F	Zen	V	Wau	Eis	.....	H-S	Own	A	6	M-E	Math	Tim 1630B	C	Own	D	7.7	47	Ros	36x5	40x10	Pru	.....	8000	174
Super Truck 100	4500	Wis	4¾x6	36.1	L	Chic	F	Zen	G	Sim	Spl	.....	Full	Full H	A	4	Spic	Shel	Shul 610	W	Shel W-51	½	10.25	49.2	Ros	40x5	40x6†	Smi	.....	8500	164
Titan 5	4100	Buda YBU	4½x6	32.4	L	.....	F	Zen	G	Phar	Eis	.....	B-Li	B-Li	A	4	Spic	Shel	Shel 5FA30	I	Own	D	11	59	Lav	36x5	40x12	Smi	.....	8400	156
Transport 75	....	Buda YTU	4½x6	32.5	L	Mod	F	Zen	G	Dup	Eis	Opt	B.B.	Cott RU	U	4	Bld	Det	Shul 610	I	Clark 3D	D	10	52	Jac	36x5	36x12	Mot	.....	7600	170
Traylor F	4700	Buda YTU	4½x6	32.6	L	GO	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 60	A	4	Spic	Mer	Shel 4FA20	W	Shel W-32	½	10.2	.....	Ros	36x6	40x6†	Smi	.....	9000	170
Ultimate D	5500	Buda BTU	5 x6½	40	L	Own	F	Strm	G	Pier	Eis	Bos	B-Li	B-Li 60	A	4	Spic	Shel	.....	W	Shel W-51	½	8.75	46.8	Ros	36x6	40x14	Smi	.....	8600	180
U. S., S. Special	....	Hin HA	4½x5½	32.4	L	Lng	F	Strm	V	Hin	Eis	Opt	B-Li	B-Li 55	A	4	Opt	Shel	.....	W	Shel	½	11.75	62.9	Lav	36x6	40x6†	Smi	.....	7500	168
Walter S	5100	Own DU	4½x6¼	32.4	L	Bus	F	Strm	G	.....	Bos	Wes	B-Li	.....	A	4	Own	Stan	.....	R	.....	F	9	45	Ros	36x6	40x6†	Day	.....	8200	168
Ward La France A	4890	.....	5 x6¼	40	L	Own	F	Strm	G	.....	Bos	.....	B-Li	B-Li 60	A	4	Spic	Row	Tim 1730B	W	Tim 6760	F	8.8	47.08	Ros	36x6	40x6†	Smi	.....	9300	164
White 45	4500	Own GR	4¼x5¾	28.9	L	.....	F	Zen	V	Own	.....	.....	Own	Own GMC	U	4	Own	.....	Own	R	Own	F	11.7	48.26	Own	36x6	40x6†	.....	.....	8100	174
Wilcox F	4350	Buda	4¾x6½	36.1	L	.....	S	Strm	V	Dup	Bos	.....	Own	.....	A	4	Spic	Shel	.....	R	.....	½	10.25	56.58	Own	36x5	40x12	Smi	.....	9000	162
Wilson H	4250	Cont	4¾x6	36.1	L	Lng	FS	Hol	V	Pier	Eis	.....	B.B.	Cott S	A	4	KB	Per	Tim 1730	W	Tim 6760	F	10.25	42.35	Ros	36x6	40x6†	Sm	.....	7500	160
Winther 109	4700	Wis WAU	4½x6	32.4	L	Brm	F	Mas	V	Dup	Eis	Wes	B.B.	B-Li 60	A	4	Bld	Math	Tim	I	Clark	D	12	60.5	Ros	36x5	40x6†	Cla	.....	8300	162
½, 6 and 7 Ton																															
Autocar B	4350	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7400	156
Autocar Y	4200	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Owh	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7200	120
Clinton 120S	4890	Buda BTU	5 x6½	40	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 60	A	4	M-E	Row	Tim 1732 B	W	Tim 6760	F	11.66	62.4	Ros	36x6‡	40x7†	StM	.....	9400	180
Clydesdale 2	....	Cont B-5	4¾x6	36.1	L	Own	F	Zen	V	Own	Bos	.....	B-Li	B-Li 60	A	4	Spic	Stan	Tim 1730B	W	Tim 6760	D	11.6	62.5	Ros	36x7	40x7†	.....	.....	.....	176
Garford 150 A-7½	5750	Buda BTU	5 x6½	40	L	Own	F	Strm	G	Sim	Spl	.....	Own	Own	J	4	Spic	Per	Tim 1730B	C	Own	D	11.44	.....	Ros	36x6	40x7†	.....	.....	10200	162
Gramm-Bernstein 50-60	4450	Cont	4¾x6	36.1	L	Own	F	Strm	G	Con	Eis	NE	Own	Own	A	4	Own	Per	Shel	...	Shel W51	½	10.5	62.	Ros	36x6	40x6†	Smi	.....	9700	168
Hurlburt E-E	4850	Buda ATU	4¾x6½	36.1	L	.....	.....	.....	...	Sim	Eis	.....	.....	.....	A	4	.....	.....	.....	W	Tim 6760	F	10.25	.....	.....	36x6	40x6	.....	.....	9965	Op
Kelly-Springfield K-60	4600	Own	4½x6½	32.4	T	Lng	F	Zen	G	Pier	Eis	Del	B.B.	Covt	A	4	.....	Per	Own	C	Own	D	12.41	50.26	Gem	36x6	40x7†	Smi	.....	9000	Op
Kelly-Springfield K-61	4800	Own	4½x6½	32.4	T	Lng	F	Zen	G	Pier	Eis	Del	B.B.	Covt	A	4	Pet	Per	Own	I	Own	D	11.6	61.8	Gem	36x6	36x7	Cla	.....	9025	Op
MacDonald AB-7½	8000	Buda YTU	4½x6	32.4	L	Own	F	Zen	V	Sim	Spl	.....	B-Li	B-Li	U	4	Own	Own	.....	I	Own	D	17.5	77.	Own	40x7	Opt	Opt	.....	.....	190
Mack AC6½	5750	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	8.95	57.41	Own	36x6	40x12	.....	.....	9500	Op
Mack AC7½	6000	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	10.5	67.38	Own	36x7	40x7†	.....	.....	9900	Op
Master 64	....	Buda ATU	4¾x6½	36.1	L	Chic	F	Zen	V	Pier	Eis	.....	B-Li	B-Li	A	4	Spic	Det	Tim 1730B	W	Tim 9760	F	Opt	Opt	Ros	36x6	40x14	Smi	.....	9800	170
Old Reliable L	6000	Wau EU	5 x6¼	40	L	Chic	S	Strm	G	Wau	Bos	.....	Own	Own	J	4	Pet	Shel	Cont 2005	C	Own	D	10.07	50.65	Ros	36x6	40x7†	Sch	.....	10250	Op
Pierce Arrow RF-7½	5200	Own	4½x6¾	32.4	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	10.	.....	.....	36x6‡	40x8†	.....	.....	9540	168
Pierce Arrow RE	5100	Own	4½x6¾	32.4	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	10.	.....	.....	36x6‡	40x7†	.....	.....	9540	168
Rainier R-27	5100	Cont B-5	4¾x6	36.1	L	EM	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1682B	W	Tim 6760	F	13.66	73.08	Ros	36x6	40x6†	Smi	.....	9000	170
Schwartz 120 S	4890	Buda BTU	5 x6½	40	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 60	A	4	M-E	Row	Tim 1732 B	W	Tim 6760 F	F	11.66	62.4	Ros	36x6‡	40x7†	StM	.....	9400	180
Service 103	....	Buda YBU	4½x6	32.4	L	Lng	F	Strm	V	.....	Eis	.....	B-Li	B-Li 60	A	4	M-E	Shel	Tim 1730	W	Tim 6760	F	10.25	54.8	Ros	36x6	40x12	.....	.....	9170	173
Standard 5-7K	4495	Cont B-5	4¾x6	36.1	L	Lng	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 60	A	4	Spic	Am	Tim 1730	W	Tim 6760	F	11.66	62.3	Gem	36x6	40x14	Day	.....	8700	164
Sterling 7½-Chain	6500	Wau	5 x6¼	40	L	Own	F	Zen	V	Wau	Eis	.....	H-S	.....	A	6	M-E	Math	.....	C	Own	D	7.26	44	Ros	36x6	40x7†	Smi	.....	10575	174
U. S. T	....	Buda ATU	4¾x6½	36.1	L	Lng	F	Strm	V	Sim	Eis	Opt	B-Li	B-Li 60	A	4	Opt	Shel	Shel 4FA20	W	Shel W-51	½	10.25	54.8	Lav	36x6	40x6†	Smi	.....	9700	172
Walter R	5400	Own DU	4½x6¼	32.4	L	Bus	F	Strm	G	.....	Eis	Wes	B-Li	.....	A	4	Own	.....	.....	F	11	55	Ros	36x6	40x7†	Day	.....	8500	168
Winther 140	....	Wis-RBU	5 x6	40	L	Brm	F	Mas	V	Dup	Eis	Wes	B.B.	B-Li 60	A	4	Bld	Math	Tim	I	Clark	D	12	60.5	Ros	36x6	40x7†	Cla	.....	9600	162
Gasoline Tractor-Trucks																															
Federal Light Duty	....	Cont K-4	4⅛x5¼	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	Det	A	4	Spic	.....	Own	W	Tim 6560	F	8.5	50.15	Gem	36x4	36x4†	.....	.....	5000	121
Federal Heavy Duty	....	Cont L-4	4½x5½	32.4	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	W-Gr	A	4	Spic	.....	Tim 1630B	W	Tim 6666	F	10.33	59.8	Gem	36x5	36x5†	.....	.....	6700	125
G. M. C. K-41T	....	Own	4 x5½	25.6	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	U	7	Own	Det	Tim 1630B	W	Tim 6560	F	8.5	57.5	Own	36x4	36x8	Bet	.....	5300	127
G. M. C. K-71T	....	Own	4½x6	32.4	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	A	7	Own	Det	Tim 1630B	W	Tim 6666	F	10.33	88.83	Own	36x5	40x12	Own	.....	7885	138
G. M. C. D-101T	....	Own	4½x6	32.4	L	Own	F	Mar	G	Own	Sim	Opt	Own	Own	A	7	Own	Det	Tim 1630B	W	Tim 6760	F	11.66	100.4	Own	36x5	40x14	Own	.....	8585	138
Harvey WFT	3050	Buda ETU	4¼x5½	28.9	L	Own	F	Strm	G	McC	Spl	.....	Full	B-Li 50	A	4	Spic	Bea	Shel D-370	W	Shel W-21	½	9.5	45.9	Ros	36x5	36x10	Smi	.....	7030	125
Harvey WHT	4050	Buda YTU	4½x6	32.4	L	Own	F	Strm	G	McC	Spl	.....	Full	B-Li 60	A	4	Spic	Bea	Shel 4FA20	W	Shel W-32	½	10.2	54.7	Ros	36x6	36x12	Smi	.....	8900	125
International 62 3 Ton	....	Own	4¼x5	28.9	H	Own	FS	Ens	G	Own	Spl	Own	Own	.....	A	4	Own	.....	.....	I	.....	D	9	47.8	Own	.....	.....	Own	.....	.....	122
International 102 5 Ton	....	Own	4¼x5	28.9	H	Own	FS	Ens	G	Own	Spl	Own	Own	.....	A	4	Own	.....	.....	I	.....	D	11	58.4	Own	.....	.....	Own	.....	.....	122
Lombard 140 H.P.	....	Spec 6	5¾x7	72.7	L	Spec	F	Strm	P	.....	Sim	Wes	Own	Own	A	3	Own	.....	Own	W	Own	...	.....	.....	Spe	.....	.....	.....	.....	18000	...
Lombard 60 H.P.	....	Spec 4	5⅛x6½	42	L	Spec	F	Strm	P	.....	Sim	Wes	Own	Own	A	4	Own	.....	.....	W	Own	...	.....	.....	Spe	.....	.....	.....	.....	8000	...
Mack AB 5-Ton	3400	Own AB	4¼x5	28.9	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	10.53	51.07	Own	36x4	36x4†	.....	.....	5200	122
Mack AC 7-Ton	4950	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	9.69	62.20	Own	36x5	40x5†	.....	.....	8700	128
Mack AC 10-Ton	5500	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	10.5	67.38	Own	36x6	40x6†	.....	.....	9150	128
Mack AC 13-Ton	5750	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	11.58	74.29	Own	36x6	40x12	.....	.....	9175	128
Mack AC 15-Ton	6000	Own AC	5 x6	40	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	J	4	Spic	Mer	Own	C	Own	D	12.92	82.92	Own	36x7	40x7†	.....	.....	9500	128
Pierce Arrow XB	....	Own	4 x5½	25.6	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	9.66	.....	.....	36x5	36x5†	.....	.....	6280	118
Pierce Arrow WD	....	Own	4½x6¾	32.4	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	8	.....	.....	36x6	36x6†	.....	.....	8490	118
Pierce Arrow RF	....	Own	4½x6¾	32.4	T	Own	F	Strm	P	.....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	10	.....	.....	36x6	36x6†	.....	.....	9540	118
Walter FT	6500	Own DU	4½x6¼	32.4	L	Bus	F	Strm	V	.....	Eis	Wes	M-E	.....	...	5	Own	.....	.....	...	.....	F	8.5	85	Ros	40x7	40x7†	Day	.....	8900	100
Watson U	4050	Cont E-4	4½x5½	32.4	L	Jam	FS	Strm	G	Pier	Sim	.....	B-Li	.....	U	4	Spic	Shel	.....	W	.....	F	8.75	42.35	Gem	34x4	36x5†	C&M	.....	6500	180

ELECTRIC COMMERCIAL CARS

Name and Model Number	Carrying Capacity	Chassis Weight—Exclusive of Battery	Chassis Weight—with Minimum Battery Capacity	Chassis Weight With Maximum Battery Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
C-T D-1	1000	2200	.....	.....	1700	14	A	55	G-E	Own	4	Own	Flot	Shel	36x3	36x3½	W	100	69
C-T B-1.5	1500	2300	.....	.....	2100	14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	91½	65
C-T D-1.5	1500	2300	.....	.....	2100	14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	116	71
C-T B-2	2000	2400	.....	.....	2350	14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	101	66
C-T D-2	2000	2400	.....	.....	2350	14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	124	70
C-T B-4	4000	4000	.....	.....	2800	12	A	50	G-E	Own	4	Own	Flot	Shel	36x4	36x4†	W	116	68
C-T C-6	6000	4300	.....	.....	3100	10	A	45	G-E	Own	4	I	D	Shel	36x4	36x4†	W	122	70
C-T C-7	7000	5000	.....	.....	3800	10	A	45	G-E	Own	4	I	D	Shel	36x5	36x5†	W	126	65
C-T A-7	7000	5800	.....	.....	4150	11	A	45	G-E	Own	4	I	D	Shel	36x6	36x4†	W	122	60
C-T A-10	10000	6500	.....	.....	4250	10	A	45	G-E	Own	4	I	D	Shel	36x7	36x5†	W	132	59
Kelland AT	1000	1950	3050	3550	.....	15	S	50	G-E	G-E	4	R	Flot	Mer	34x3	34x3	Ross	102	60
Kelland BT	1500	2050	3150	3950	.....	15	S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x3½	Ross	102	60
Kelland CT	2000	2150	3450	4050	.....	15	S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x4	Ross	102	60
Kelland AH	1000	2500	3600	4100	.....	15	A	45	G-E	G-E	4	C	D	Mer	36x3	36x3	Hin	106	60
Kelland BH	1500	2600	3700	4500	.....	15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x3½	Hin	106	60
Kelland CH	2000	2700	4000	4600	.....	15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x4	Hin	106	60
Lansden Century	1250	1700	.....	.....	1600	15	S	50	G-E	G-E	4	R	Flot	SP	32x4½	32x4½	Lav	108	50
Lansden Century	2000	1950	.....	.....	1850	15	S	50	G-E	G-E	4	R	Flot	SP	33x5	33x5	Lav	112	50
Lansden Marathon	2000	2900	.....	.....	1850	12	A	50	G-E	G-E	4	C	D	SP	36x3	36x3½	KH	108	60
Lansden Marathon	4000	4400	.....	.....	2250	11	A	50	G-E	G-E	4	C	D	SP	36x4	36x3†	KH	120	60
Lansden ME	7000	5700	.....	.....	2950	10	A	45	G-E	G-E	4	C	D	SP	36x5	36x4†	KH	133	60
Lansden MF	10000	7500	.....	.....	3350	9	A	40	G-E	G-E	4	C	D	SP	36x6	36x5†	KH	146	60
Milburn Model 40	2000	1990	.....	.....	1985	15	H&S	40	G-E	Own	4	.....	W	Math	32x4½	33x5	Gem	128	62
Milburn Model 43	1000	1690	.....	.....	1585	18	H&S	50	G-E	Own	4	.....	W	Math	32x4½	32x4½	Gem	115	56
Milburn Model 27D	500	1325	.....	.....	1085	20	H&S	50	G-E	Own	4	.....	W	Math	33x4	33x4	Gem	105	48
O. B. A	2000	.....	.....	.....	2175	14	.....	.....	G-E	Own	...	C	D	.....	36x3½	36x4	Own	103	.....
O. B. B	4000	.....	.....	.....	2650	13	.....	.....	G-E	Own	...	C	D	.....	36x4	36x3½†	Own	107	.....
O. B. C	7000	.....	.....	.....	3750	11	.....	.....	G-E	Own	...	C	D	.....	36x5	36x4 †	Own	135	.....
O. B. D	10000	.....	.....	.....	3950	10	.....	.....	G-E	Own	...	C	D	.....	36x6	36x5 †	Own	143	.....
Steinmetz 10	1000	2000	.....	.....	.....	16	H&S	52	Diehl	Own	4	R	Russ	Shel	32x4½	32x4½	Lav	106	60
Steinmetz 15	1500	2300	.....	.....	.....	16	H&S	55	Diehl	Own	4	R	Russ	Shel	33x5	33x5	Lav	114	60
Walker 12	1000	1900	.....	.....	.....	15	.....	60	G-E	West	4	.....	Tim	Det	32x3	32x3½	Ross	104	66
Walker 15	1500	2600	.....	.....	.....	15	.....	60	West	West	5	Own	Own	Math	34x3	36x3½	Ross	94	66
Walker 22	2000	2800	.....	.....	.....	14	.....	60	West	West	5	Own	Own	Math	34x3½	36x4	Ross	101	66
Walker 42	4000	3800	.....	.....	.....	13	.....	60	West	West	5	Own	Own	Math	36x4	36x6	Ross	114	66
Walker N	10000	6400	.....	.....	.....	10	.....	50	West	West	5	Own	Own	Math	36x6	38x6†	Ross	141	66
Walker P	7000	5600	.....	.....	.....	11	.....	50	West	West	5	Own	Own	Math	36x5	38x5†	Ross	131	66
Walter EN	4000	4400	.....	.....	3100	15	A	50	G-E	G-E	5	Own	D	.....	36x4	36x7	Gem	114	66
Walter EL	6000	5000	.....	.....	3700	13½	A	50	G-E	G-E	5	Own	D	.....	36x5	36x4	Gem	132	60
Walter ES	10000	7200	.....	.....	4500	12	A	50	G-E	G-E	5	Own	D	.....	36x6	40x6	Ros	150	70
Walter ER	14000	7500	.....	.....	4800	11	A	50	G-E	G-E	5	Own	D	.....	36x7	40x7	Ros	150	70
Ward WS 2	.....	1650	.....	.....	.....	14	S	75	G-E	Own	4	W	Shel	Shel	32x3	32x3½	Own	88	56
Ward WA	.....	2860	.....	.....	.....	13	A	52½	G-E	G-E	4	W	Shel	Shel	32x3½	34x4	Own	90	61
Ward WA 2	.....	2470	.....	.....	.....	13	S	72½	G-E	Own	4	W	Shel	Shel	32x3½	34x4	Own	90	61
Ward WB	.....	3850	.....	.....	.....	12½	A	50	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	64
Ward WB 2	.....	3350	.....	.....	.....	12½	S	70	G-E	Own	4	W	Shel	Shel	34x4	36x5	Own	102	64
Ward WD	.....	4875	.....	.....	.....	11	A	50	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	68
Ward WD 2	.....	4350	.....	.....	.....	11	S	60	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	68
Ward WF	.....	7200	.....	.....	.....	10	A	40	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Ward WF 2	.....	6450	.....	.....	.....	10	S	40	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Ward WH	.....	9400	.....	.....	.....	9	A	38	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	146	70
Ward WH 2	.....	8200	.....	.....	.....	9	S	38	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	146	71
Ward WM	.....	2600	.....	.....	.....	12½	S	57½	G-E	Own	4	W	Shel	Shel	32x3½	32x4	Own	88	70
Ward WM 2	.....	2900	.....	.....	.....	12	S	70	G-E	Own	4	W	Shel	Shel	32x3½	32x5	Own	96	70

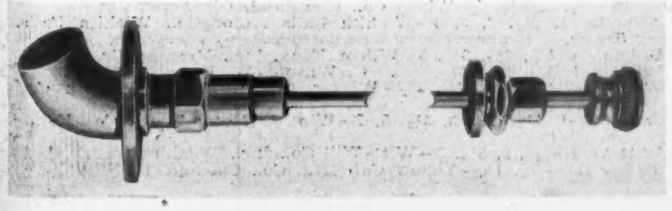
NOTE: Battery Equipment in all above makes is at the option of the purchaser. Battery Location Abbreviations: A—amidships; H—under hood; and S—under seat.

Ideal Reserve Valve

The Ideal Reserve Valve put out by the Ideal Equipment Co., Indianapolis, Ind., is designed to be placed on the inside of gasoline tank. By using this method it has eliminated any possible chance of a leak. It can be used either in connection with a vacuum tank system or gravity feed. There are no complicated parts and it can be installed on any tank in a very few minutes.

When feeding on a regular supply of fuel, the knob at the top of the tank is pushed down and gasoline is feed through the top of the outlet on the inside of the tank. When the gasoline is used up to this point, all that is necessary is to pull the knob up. The remainder of the gasoline in the tank feeds through the opening in the bottom part of the valve. It is made with standard fittings and carried in stock for a number of standard tanks. A special fitting is supplied of Ford size which can be attached to the Ford tank fittings without soldering.

Price complete with outlet flange as shown $2.50. Ford size $2.30.



Ideal Reserve Valve for Use in Connection With Either Vacuum Tank or Gravity Feed System.

Gramm-Bernstein Reorganization Plan Progressing

Progress is reported in the reorganization of the Gramm-Bernstein Motor Truck Co., of Lima, Ohio, by F. C. Kirby, the receiver. The plan now under consideration contemplates the provision of $500,000 of new capital, immediate lifting of the receivership, and continuation of the under practically the same management.

Berkshire Electric Wiper

Not only does the Berkshire electric wiper assure steady operation regardless of the speed of the vehicle but it does so independently and with a current consumption stated to be no greater than that consumed by a spot light. The value of an automatic windshield wiper on a bus for stormy weather operation is obvious, entire attention can be devoted to the operation of the bus. It is manufactured by the Berkshire Products Corp., Pittsfield, Mass.

The wiper is ruggedly constructed, silent and efficient in operation, and foolproof. All parts entering into its construction are well finished and inspected. The assembly of the parts in the case is neat and compact. The driving mechanism is simple, employing well-known mechanical movements. It consists of but few moving parts. This wiper can also be operated by hand should anything happen to the power supply.

The mirror and fittings are supplied extra. The price of wiper complete with wiring is $9.50 and mirror complete with fittings, $2.50.

Manufacturers and Models Included in Specifications on Preceding Pages

Acason—2, 2½, 3½, 5—The Acason Corp., Detroit, Mich.
Ace—1½, 2½—American Motor Truck Co., Newark, Ohio.
★**Acme**—1, 1½, 2, 3, 3½ 4½, 6¼—Acme Motor Truck Co., Cadillac, Mich.
American—2½, 4, 5—American Motor Truck & Tractor Co., Portland, Conn.
★**American La France**—¾, 2, 3½, 5—American La France Fire Engine Co., Inc., Elmira, N. Y.
Armleder—1, 1½, 2½, 3½—O. Armleder Motor Truck Co., Cincinnati Ohio.
Atco—1½, 2½—American Truck & Trailer Corp., Kankakee, Ill.
Atlas—1¼, 2—Atlas Truck Corp., Div. of Industrial Motor Corp., York, Pa.
★**Atterbury**—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y.
★**Autocar**—1, 1¼, 1½, 2, 2½, 3, 4, 5 to 7—Autocar Co., Ardmore, Pa.
Available—1½, 2, 2½, 3½, 5—Available Truck Co., Chicago, Ill.
Avery—1—Avery Company, Peoria, Ill.
Bell—1, 1½, 2½—Iowa Motor Truck Co., Ottumwa, Ia.
Belmont—1, 2, 3—Belmont Motors Corp., Harrisburg, Pa.
★**Bessemer**—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.
Bethlehem—1, 2, 3—Bethlehem Motors Corp.,Allentown, Pa.
Betz—7, 2½—Betz Motor Truck Co., Hammond, Ind.
Brinton—1½, 2½—Brinton Motor Truck Co., Philadelphia, Pa.
Brockway—¾, 1½, 2½, 3½, 5—Brockway Motor Truck Co., Cortland, N. Y.
Buffalo—2, 3—Buffalo Truck and Tractor Corp., Clarence, N. Y.
Buick—¾—Buick Motor Co., Flint, Mich.
C. T.—1, 1½, 2, 3½, 5—Commercial Truck Co., Philadelphia, Pa.
Casco—1—Casco Motors, Inc., Portland, Maine.
Case—2—J. I. Case Plow Works Co., Racine, Wis.
Chevrolet—½, ¾—Chevrolet Motor Co. of Mich., Flint, Mich.
Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill.
Climber—1½—Climber Motor Corp., Little Rock, Ark.
Clinton—1¼, 2, 3, 4, 5 to 7—Schwartz Motor Truck Corp., Reading, Pa.
Clydesdale—1¼, 2½, 3½, 5, 7—Clydesdale Motor Truck Co., Clyde, Ohio.
★**Commerce**—¾, 1½, 2½—Commerce Motor Truck Co., Detroit, Mich
Concord—1½, 2, 2½, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
Corbitt—¾, 1, 1½, 2, 2½, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
★**Day-Elder**—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.
Defiance—1¼, 1½, 2, 3—Defiance Motor Truck Co, Defiance, Ohio.
★**Denby**—1¼, 2, 3, 4, 5—Denby Motor Truck Co., Detroit, Mich.
Dependable—1¼, 2, 2½, 3, 3½—Dependable Truck & Tractor Co. East St. Louis, Ill.
Diamond T—1¼, 1½, 2½, 3½, 5—Diamond T Motor Car Co., Chicago, Ill.
Diehl—1, 1½—Diehl Motor Truck Works, Philadelphia, Pa.
Dixon—1½, 2½, 3½—Dixon Motor Truck Co., Altoona, Pa.
Dodge—¾—Dodge Bros., Detroit, Mich.
D-Olt—1, 1½, 2½, 5—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
Dorris—1, 2, 3½—Dorris Motor Car Co., St. Louis, Mo.
Dort—½—Dort Motor Car Co., Flint, Mich.
Double Drive—4—Double Drive Truck Co., Benton Harbor, Mich.
★**Duplex**—1, 1½, 2, 3½—Duplex Truck Co., Lansing, Mich.
Eagle—1¼, 2—Eagle Motor Truck Corp., St. Louis, Mo.
Eugol—1—Eugol Motor Truck Co., Chicago, Ill.
F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
Facto—2½—Facto Motor Trucks, Springfield, Mass.
Fageol—2, 3, 4, 5—Fageol Motors Co., Oakland, Cal.
★**Federal**—¾, 1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
Ford—1—Ford Motor Co., Highland Park, Mich.
Front Drive—1½—Double Drive Truck Co., Benton Harbor, Mich.
Fulton—1, 2—Fulton Motors Corp., Farmingdale, N. Y.
★**G. M. C.**—1, 2, 3½, 5—General Motors Truck Co., Pontiac, Mich.
G. W. W.—1½—Wilson Truck Mfg. Co., Henderson, Ia.
★**Garford**—1, 1½, 2½, 4, 5, 7½—Garford Motor Truck Co., Lima, O.
Gary—1, 2, 2½, 3½, 5—Gary Motor Corp., Gary, Ill.
Gotfredson—1, 1½, 2½, 4, 5—Gotfredson Truck Corp., Ltd., Walkerville, Ont.
★**Graham**—1, 1½—Graham Brothers, Evansville, Ind.
★**Gramm-Bernstein**—1, 1¼, 1½, 2, 2½, 3½, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
Hal-Fur—2, 3½—Hal-Fur Motor Truck Co., Cleveland, Ohio.
Harvey—2, 2½, 3½, 6, 10—Harvey Motor Truck Co., Harvey, Ill
Hawkeye—1, 1½, 2½, 3½—Hawkeye Truck Co., Sioux City, Iowa.
Hendrickson—2½, 3½, 5—Hendrickson Motor Truck Co., Chicago Ill.
Hewitt-Ludlow—2, 2½, 3½, 5—Hewitt-Ludlow Co., Inc., San Francisco, Cal.
Hug—1½—The Hug Co., Highland, Ill.
Hurlburt—1½, 2½, 3½, 5, 7—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Independent—1, 1½, 2½—Independent Motor Truck Co., Inc., Davenport, Ia.
Indiana—1, 1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind.
★**International**—¾, 1, 1½, 2, 2½, 3, 5—International Harvester Co., of America, Chicago, Ill.
Jackson—3½—Jackson Motors Corp., Jackson, Mich.
Jumbo—1½, 2, 2½ 3, 3½, 5—Nelson Brothers Co., Saginaw, Mich.
Kalamazoo—1½, 2½, 3½, 5—Kalamazoo Motor Corp., Kalamazoo, Mich.
Kearns—1, 1½, 2—Kearns-Dughie Motors Co., Danville, Pa.
Kelland—Kelland Motor Car Co., Newark, N. J.
Kelly-Springfield—1½, 2½, 3½, 5, 6—Kelly-Springfield Motor Truck Co., Springfield, O.
Kenworth—1½, 2½, 3½—Kenworth Motor Truck Corp., Seattle, Wash.
Keystone—2—Keystone Motor Truck Corp., Oaks, Pa.
★**Kissel**—1, 1½, 2½, 4—Kissel Motor Car Co., Hartford, Wis.

★ Indicates Advertisers. See Advertisers' Index.

Lange—2, 2½—Lange Motor Truck Co., Pittsburgh, Pa.
Lansden—¾, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
Larrabee-Deyo—1, 1½, 2½, 3½,—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
Lombard—T.T.—Lombard Auto Tractor Truck Corp., New York, N. Y.
Luedinghaus—1, 1½, 2—Luedinghaus-Espenschied Wagon Co., St. Louis, Mo.
Maccar—1½, 3, 4, 5—Maccar Truck Co., Scranton, Pa.
MacDonald—5, 7, 7½—Union Construction Co., San Francisco, Cal.
Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—Mack Motors, Inc., New York, N. Y.
Mason Road King—1—Durant Motors, Inc., Long Island City, N. Y.
★**Master**—1¼, 1½, 2½, 3½, 5, 5½—Master Motors Corp., Chicago, Ill.
Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
Menominee—1, 1¼, 1½, 2, 3½, 5—Menominee Motor Truck Co. Clintonville, Wis.
Milburn—Milburn Wagon Co., Toledo, O.
Moreland—1, 1½, 2, 3, 5—Moreland Motor Truck Co., Burbank, Cal.
Nash—1, 2—Nash Motors Co., Kenosha, Wis.
Nelson-LeMoon—1, 1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
Netco—2, 2½, 3—New England Truck Co., Fitchburg, Mass.
Niles—2½—South Main Motor Co., Pittsburgh, Pa.
Noble—1, 1¼, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.
Northway—2, 3½—Northway Motors Corp., Boston, Mass.
O. B.—1, 2, 3, 5—O. B. Electric Vehicles, Inc., Long Island City, N. Y.
O. K.—1½, 2½, 3½—Oklahoma Auto Mfg. Co., Okay, Okla.
Ogden—¾, 1½, 2½, 3½, 5—Ogden Truck Co., Chicago, Ill.
Old Reliable—2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
Oldsmobile—1—Olds Motor Works, Lansing, Mich.
Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
Oneida—2, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay, Wis.
Oshkosh—2, 2½—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
Overland—½—Willys-Overland Co., Toledo, O.
Parker—1, 1½, 3, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
Patriot—1, 2, 3—Patroit Mfg. Co., Navelock, Neb.
Penn—2—Penn Motors Corp., Philadelphia, Pa.
Perfection—¾, 1¼, 2, 3, 4½, 5—Perfection Truck Co., Minneapolis, Minn.
★**Pierce-Arrow**—2, 3, 4, 5, 6, 7½, T.T.—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
Pioneer—1—Pioneer Truck Co., Chicago, Ill.
Pittsburgher—2, 3, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
Power—2½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
Rainer—¾, 1, 1½, 2, 2½, 3½, 5—Rainer Motor Corp., Long Island City, N. Y.
Reo—1¼—Reo Motor Car Co., Lansing, Mich.
★**Republic**—1, 1¼, 1½, 2, 3, 4—Republic Motor Truck Co., Inc., Alma, Mich.
Reynolds—2, 3—Reynolds Truck Co., Mount Clemens, Mich.
★**Rowe**—2, 2½, 3,4 , 5—Rowe-Stuart Corp., Lancaster, Pa.
★**Ruggles**—¾, 1¼, 2, 2½—Ruggles Motor Truck Co., Saginaw, Mich.
Rumely—1½—Advance-Rumely Thresher Co., Inc., La Porte, Ind.
Sandow—1, 1½, 2½, 3½, 5—Moses & Morris Motors Corp., Chicago Heights, Ill.
Sanford—1, 1½, 2½, 3½, 5—Sanford Motor Co., Syracuse, N. Y.
★**Schacht**—1½, 2, 3, 4, 5—G. A. Schacht Motor Truck Co., Cincinnati, O.
Schwartz—1¼, 2, 3, 4, 5 to 7—Schwartz Motor Truck Corp., Reading, Pa.
★**Selden**—1½, 2½, 3½, 5—Selden Truck Corp., Div. of Industrial Motor Corp., Rochester, N. Y.
★**Service**—¾, 1¼, 1½, 3, 3½, 4—Service Motor Truck Co., Wabash, Ind.
★**Signal**—1, 1½, 2½, 3½, 5—Signal Truck Corp. Detroit, Mich.
★**Standard**—1¼, 1½, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
Steinmetz—Steinmetz Electric Motor Car Corp., Arlington, Baltimore, Md.
Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
★**Stewart**—1, 1¼, 1½, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
Stoughton—¾, 1, 1½, 2, 3—Stoughton Wagon Co., Stoughton, Wis.
★**Super-Traction**—1, 1½, 2, 2½, 3½—Super-Traction Co., Madison, Wis.
Super Truck—2½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
Titan—2½, 3½, 5—Titan Truck Co., Milwaukee, Wis.
Thomart Speed—1¼—Thomart Motor Co., Kent, Ohio.
Tower—1½, 2½, 3½—Tower Motor Truck Co., Greenville, Mich.
Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
★**Transport**—1, 1½, 2, 3, 3½, 5—Transport Truck Co., Mt. Pleasant, Mich.
Traylor—1½, 2, 3, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
Triangle—1, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
Twin City—2, 3½—Minneapolis Steel & Machinery Co., Minneapolis, Minn.
Ultimate—1½, 2, 2½, 3, 5—Vreeland Motor Co., Inc., Newark, N. J.
Union—2½, 4—Union Motor Truck Co., Bay City, Mich.
★**United**—1, 1½, 2, 2½, 3½—United Motor Products Co., Grand Rapids, Mich.
U. S.—1¼, 1½, 2½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
Velie—1½—Velie Motors Corp., Moline, Ill.
Vim—¾—Vim Motor Truck Co., Philadelphia, Pa.
★**Walker**—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
Walter—2, 2½, 5, T.T.—Walter Truck Co., New York, N. Y.
★**Ward**—¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
Ward La France—2½, 3½, 5—Walker Motors, Inc., New York, N. Y.
Watson—1, 3½, 5, T.T.—Watson Wagon Co., Canastota, N. Y.
★**White**—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
Wichita—1, 1½, 2, 3, 4—Wichita Falls Motor Co., Wichita Falls, Texas.
Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
Wilson—1, 1½, 2½, 3½, 5—J. C. Wilson Co., Detroit, Mich.
Winter & Hirsch—2½, 3½—Winter & Hirsch Motor Truck Co., Chicago, Ill.
Winther—1, 1½, 2½, 3, 3½, 5, 7—Winther Motor Truck Co., Kenosha, Wis.
Witt-Will—1½, 2, 2½, 3—Witt-Will Co., Inc., Washington, D. C.
Yellow Cab—¼, 1¼—Yellow Cab Mfg. Co., Chicago, Ill.

Tops and Sides for Bus Bodies

In the Following Article the Requirements for Roofs and Side-Panels Are Explained by a Body Engineer, and Applications of Plywood Roofs and Plymetl Sides Described for Closed Bodies of the Single-Deck Type

By ARMIN ELMENDORF, Consulting Engineer Haskelite Manufacturing Corporation, Chicago, Illinois

WHEN designing a bus body the builder must first consider its strength. He must endeaver to reduce its weight to a minimum, in addition to designing it for comfort and appearance. The idea of strength conveys different meanings to different persons. With it, however, is associated the idea of a fracture caused by insufficient "strength." Every part of the bus body should withstand every force acting upon it in normal service, without rupturing or yielding to the point where the body becomes "rickety." But none of these parts must be made so strong that they become unnecessarily heavy or expensive. In a balanced design every element is so proportioned that it will not fail in normal service, and yet a completely balanced design cannot be achieved in practice because the conditions of service are so variable and uncertain. Bus bodies must be designed on the basis of accumulated information making such modifications only as will improve some weakness observed in previous designs.

Fig. 1. Demonstrating Resistance to Splitting of Plywood. Sample Driven Onto Conical Spear

While mathematical design of bus bodies is impracticable, a fair idea of the forces acting on them in service can be obtained by picturing a bus body as a large box which is being twisted. The pull on the corners and edges can be visualized if this box be imagined reduced in size and then twisted by hand. If the lid of this box be made of strips, they will tend to work or slip edge upon edge, an action technically known as "shear." If the roof is built up of a number of sheets of plywood it is not subject to sheating, because it does not consist of strips. The great resistance to splitting is shown in the accompanying illustration of a sharp tool-steel spear being driven into a small sample of Haskelite plywood.

Irregularities in the road may do more than twist the bus body. In driving over a cobblestone pavement or rough country road, for example, the body does not sway appreciably, yet severe stresses may be imparted to the roof due to vibration. A slat roof resists vibration roughly in proportion to the number of its roof bows. Practically no stiffening is obtained from the roof slats themselves, because there is no real edge-to-edge bond between the slats. Large crowns or arches are desirable because a highly arched member is stiffer than one with a low crown. With the plywood roof bent to a fair arch, roof bows are required only at the joints where two panel sections come together. Fig. 2 illustrates a bus having a Haskelite plywood roof constructed in this manner.

In order to reduce vibration further, the section of the roof bows must be as deep as feasible without reducing the headroom to an objectionable extent. With slat roofs, if the depth of the section is increased from 1 to 2 in., the vibration is reduced to about 1/6 or ⅛ of the original value. The plywood roof vibrates less than the slat roof even without the assistance of roof bows, assuming an appreciable arch. As a result the need for great depth of bow section is not so imperative; however the bows should be firmly joined to the pillars so as to hold the body sides rigidly together. The bows at the joints must also be wide enough to provide a base of sufficient width for the screws that hold the roof in place.

The distortions of bus bodies due to

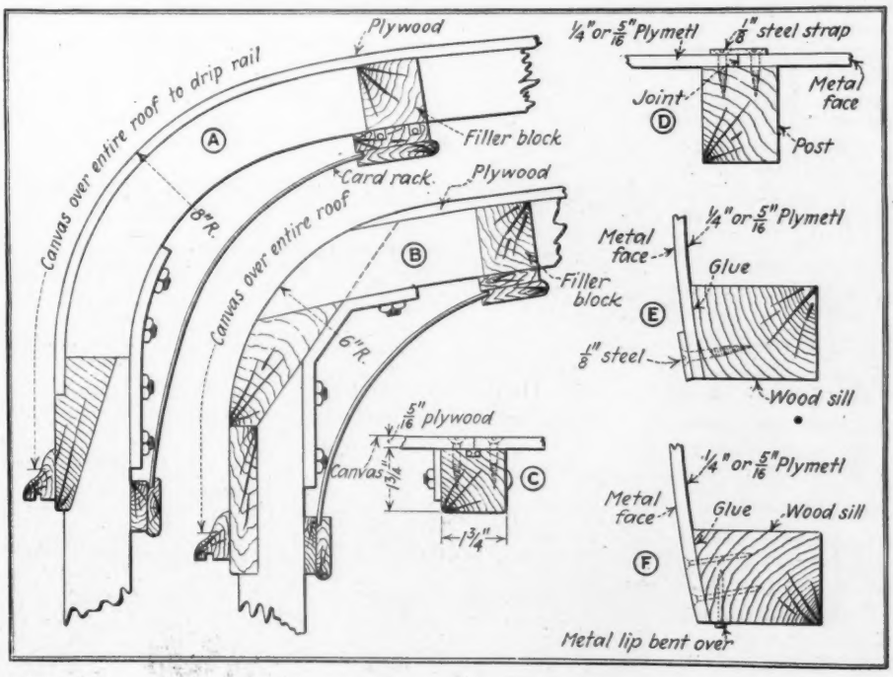


Fig. 5. Methods of Framing the Roof

A. For roof form No. 1; B. For roof form No. 2; C. Method of joining plywood roof panels over the bows. Methods of fastening Plymetl: D, to post; E, to sill; F, to sill to get flush face

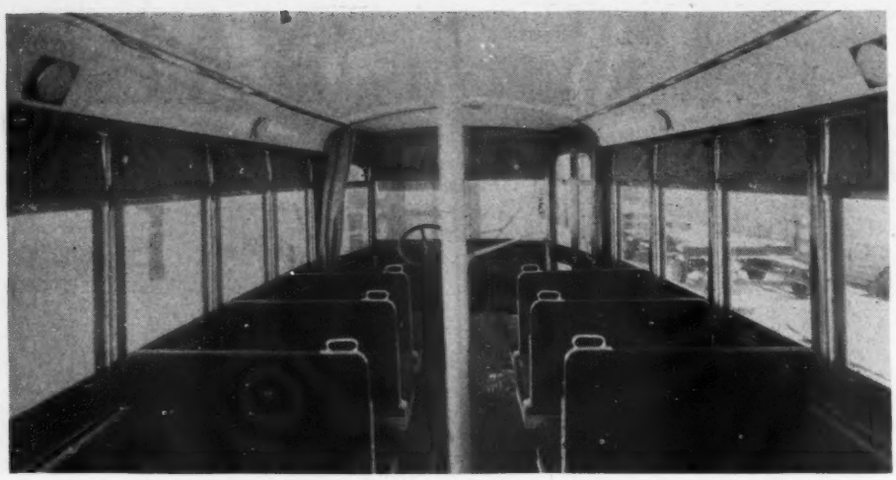


Fig. 6. Interior View of Kuhlman Bus With Plymetl Roof. Ceiling Panel and all Roof Bows Except Those at the Joints Are Eliminated. Exterior View of This Bus Shown in Figure 2

racking when driving over rough roads should take place by slight bending of frame members, and under no circumstances should there be any "give" in the joints. All joints should be rigid, a condition that can not always be completely attained, of course, but that should be striven for. A slight working of joints soon increases, disagreeable noise may follow and painted seams may open. Steel reinforcing straps at the junction of the posts with the roof bows are therefore desirable. Light transverse gusset plates at the base of the posts also contribute strength. Angle irons or gusset plates at the main joints on the front of the body are highly desirable, or whereever possible, the joints should be tongued and grooved as well as glued.

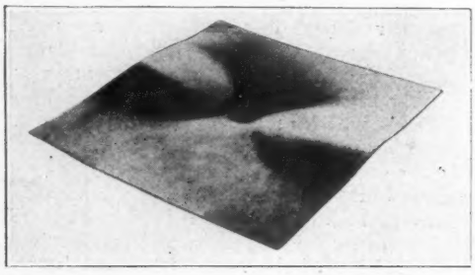


Fig. 7. A Hammer Weighing 12½ Lbs. Was Dropped 12 In. on Center of This 22 Gage Steel Panel, Supported by Frame 10½ In. Square. Panel Badly Dented.

Construction of Roof Forms

In pressing plywood material to conform to the curvatures of the edges and ends of bus roofs a flat three-ply panel usually ¼ or 5/16 in. thick, is steamed or boiled to soften the fibers and then pressed in steam-heated dies. For this only the highest grade of panel should be used, because the plies must not separate when the panel is being boiled. Haskelite is the only plywood which will pass the strict Navy Grade A Test specified for water resistant plywood.

Most roofs have curvatures of two kinds, one in which the bend is in one direction only, that is, the curvature is cylindrical as on the long edges of a bus roof; the second in which the curvature is compound, as for example the panel over the vestibule or driver's compartment. The first type of curvature frequently has such a large radius that the panel may be bent from the flat without preliminary softening. This condition pertains to the roof sections over the passenger compartment of many buses.

One-way bends in the ¼ in. or 3/16 in. plywood panels may be made to a radius of 3 in., and in the 5/16 in. thickness to a radius of 6 in., although curvatures less severe are preferred by the body builder.

Limitations to compound curves cannot be stated in simple figures. Experience alone permits us to answer questions relating to the moldability of plywood in double curvatures. A compound curve for bus roof panels, is usually defined by the crown, or distance from the concave surface of the molded panel to a straight edge placed either in the direction of the length of the body at the center of the panel or in the transverse direction, that is, across the body.

Bus body builders have developed two types of plywood roof forms. The first of these, illustrated as Roof Form No. 1 in Fig. 3, consists of three or four panels, from 4 to 5 ft. wide in the direction of the length of the body, and long enough to span the full width. Each panel usually covers two window spaces, so that the joints come on roof bows which form an extension of the posts. These panels are bent along the edges, as shown, to radii ranging from 7 to 11 in., with an average of about 8 in. The front roof section over the driver is from 3½ ft. to 4½ ft. long in the direction of the length of the body. It is steam pressed to the approximate curvatures shown in Form No. 1. The edges forming a tapered continuation of the edges of roof proper are made of wood strips or hammered metal. These strips of metal are concealed from the passengers' view by the advertising card racks. The rear edge is likewise made of wood strips, usually ship-lapped, and the two corners of hammered of spun metal. The entire roof is covered with sheet of light canvas or muslin embedded in thick paint or white lead.

In Roof Form No. 2, see Fig. 4, the curvature on the edges is obtained with the roof framing, rather than by bending the plywood itself on the edges. It will be seen from the figure that the front section over the driver is molded to form, while the remaining panels over the passengers are all bent in simple curvature only. The rear panel may be molded to about the same curvature as the front panel. Only two roof bows are needed, these being placed under the joints between successive panels.

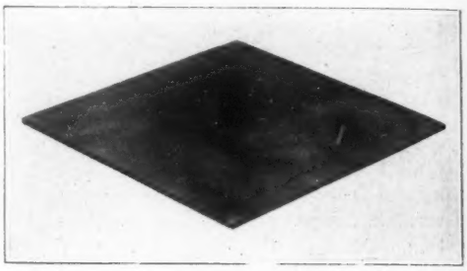


Fig. 8. This Plymetl Panel Was Tested Exactly as the Steel Panel Shown in Fig. 7. Result, No Damage, Only Slight Marking Where the Hammer Fell. This ¼ In. Plymetl Weighs the Same as 22 Gage Steel.

Fig. 2. Motor Bus Body With Plywood Roof and Plymetl Sides. Built by the G. C. Kuhlman Car Company. This Type of Bus Body is in the Service of a Number of Electric Railways

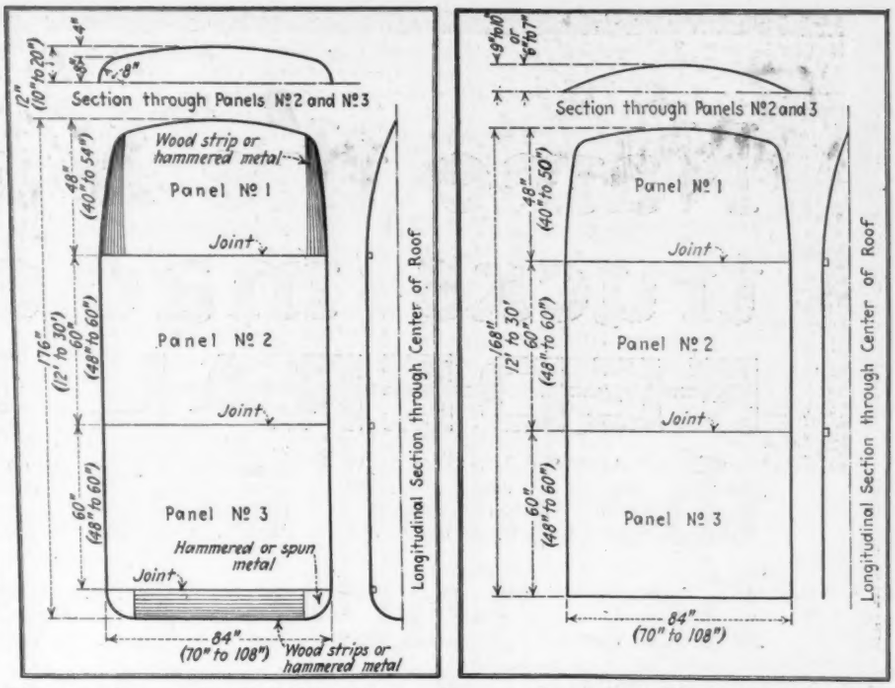
The framing for Roof Form No. 1 is substantially different from that for Form No. 2, as is indicated in Fig. 5.

In the framing shown for the No. 2 Form, the roof rail is notched to receive the ends of the bows. The edge of the roof panel rests on the roof rail. It is firmly screwed, and is, or should be, glued to the rail. Curvature of the roof edges is obtained by rounding the roof rail. The same construction is used for the rear edge. This type of framing is limited to curvatures of smaller radii than those used for the No. 1 roof form.

A typical roof bow section is shown in C, Fig. 5. A section 1¾ in. square with a 3/16-in. steel strap reinforcement supports the roof panels.

By eliminating roof bows except those at the joints of the roof panels, interior finish is obtained without ceiling panels. The elimination of these panels, as well as several of the bows, results in material reduction in the weight, where this is especially desired.

The finish obtained by plywood roof construction is shown in the interior of a bus made by the G. C. Kuhlman Car Company, illustrated in Fig. 6. The dome lights are placed in the advertising card rack, and the ceiling is enameled a light color, preferably white.



Figs. 3 and 4. Left: Roof Form No. 1. Edges of Panels and Ends Molded to Form. Right: Roof No. 2. Edges of Roof Are Rounded on Roof Frame

Material for Side Panels

Besides the stresses caused by road irregularities, the bus body may receive external blows from side swipes of other vehicles, or it may brush against road obstructions. Resistance to such indentation is just as desirable as rigid joints and freedom from vibration. A dented body looks unsightly and detracts from the commercial value of the bus. Plymetl has great ability to absorb blows without receiving a permanent dent. Figs. 7 and 8 show the results of a test of "dentability." The Plymetl retained only a superficial bruise while the sheet steel struck with the same force was dented.

The exceptional advantages of Plymetl are that it strengthens the body, provides insulation against cold weather, eliminates metallic rumble and can be finished easily. The ¼ in. stock weighs about 1.3 lb. per square foot, as compared with 1.5 lb. for No. 20 gage sheet steel. The metal on the face is extremely thin so that the material is easily trimmed with a hand hacksaw, or it can be cut on a bandsaw using a spring steel blade. This material can be bent by steaming and passing through rolls to conform to the curvatures of bus sides having a swell.

Plymetl is fastened to the posts by screws, as shown in D, E, F, Fig. 5. A steel strap distributes the pressure of the screwheads. A liberal coat of red lead should be applied to the face of this strap in contact with the material, as well as on the edges of the latter. The inside face in contact with the wood posts may be glued to the posts, thereby further contributing to the strength of the body. The same procedure should be pursued in fastening the horizontal edges. When a flush face is desired on the lower edge, the wood side of Plymetl is first notched by passing it over a circular saw, and cutting away the wood for a short distance. This leaves a metal lip, which is bent over, as shown. The nail holes are plugged with lead or "putty glaze." By driving nails close together it is not necessary to clamp the panel against the sill in gluing.

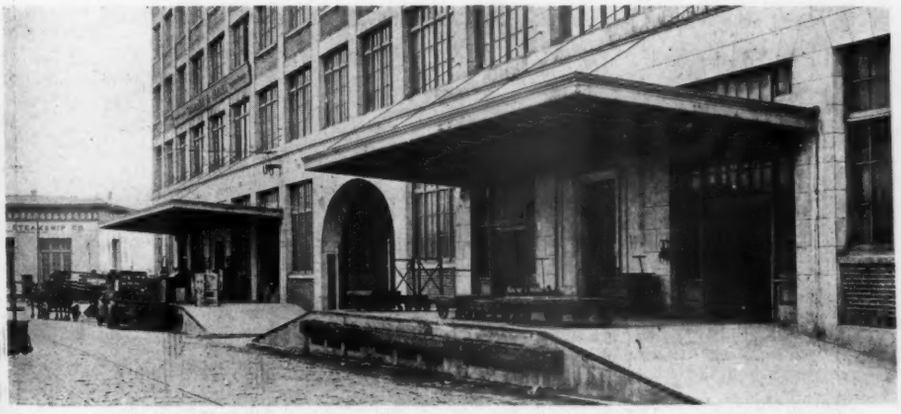
Summary

1. The plywood roof provides interior finish without a separate ceiling panel. It is smooth on the exterior and free from ridges and bumps.

2. The plywood roof can be made in two general forms, one with the edges bent, and the other where the curvature on the edges of the roof is obtained with the roof frame.

3. The plywood roof weighs less than one-half as much as the slat roof with a separate ceiling panel.

4. Plymetl weighs less, and is more resistant to indentation than sheet steel. It strengthens the body, furnishes considerable heat insulation, and can be finished like sheet steel.



Illustrating a Detail of Efficiency in the Shipping Department

These two well arranged shipping platforms of the house of Tillman & Bendel, grocery wholesalers of San Francisco, facilitate the handling of motor truck shipments. The platforms are substantially constructed of concrete and equipped with solid wood bumpers to act as protecting buffers. The ramps also provide greater flexibility of industrial truck operation.

Malay Governments to Use British Trucks

The various Malay state governments intend to standardize on one make of British truck, and are now considering which truck will be adopted, according to a statement by a dealer in touch with conditions in British Malaya. The States buy about five trucks a year; this is considered a fair order, as it means the purchase of repair parts. In the trade it is thought that there will be protests from the manufacturers of other British trucks which are thus excluded from the business. A number of American trucks have been used by these Governments in the past, Consul E. L. Harri Singapore, reports to the Department of Commerce.

Name the four best trucks made and ~~FEDERAL~~ is not the last one in the list. Pick the "best seller" among them and ~~FEDERAL~~ is First. A ~~FEDERAL~~ Truck Selling Franchise is worth going to a lot of trouble to get and ~~FEDERAL~~ Modern Design Trucks are worthy of your best selling effort.

EDITORIALS

The New Jersey Trolley Strike

ALTHOUGH the trolley strike may be settled one way or the other by the time this publication is received by our readers, at the time of this writing the strike is still on. Although the question of wages precipitated the strike, the real issue to be decided now is whether the buses or trolleys will handle the traffic in the 145 towns affected by the strike, or a combination of both. In some of the cities Chambers of Commerce are trying to have the trolleys reinstated, but in the majority of places the bus is favored.

The Public Service Railway Company which operates the traction lines, after three weeks of inactivity, produced a plan by which it would be willing to resume operations. The plan calls for purchase of all buses now operated at fair physical value, and that the buses be operated in co-ordination with the trolleys. The plan further calls for running of buses not purchased by the company on streets which have no trolleys, also that no new competitive bus licenses are to be issued in the future.

It is plain to be seen that from the foregoing that the traction company is sparring for complete control of the traffic, which would put the buses and trolley under one management. The plan outlined by the traction company would permit it to run its cars and at the same time allow it to increase its transportation facilities in locations now lacking them.

The people have been dissatisfied with the service rendered by the trolley company. With the advent of the bus the people got service which the trolley company did not give them. No wonder therefore that the sentiment of the public is at this time in favor of the buses. In Camden particularly the buses have made a hit with the people, and though the present service rendered by the buses is no comparison to that which can be given if the bus operators are given long term franchises, the buses are proving their merits as public carriers. The buses have been giving a service which is truly remarkable.

The fact of the matter is that the bus operators have been educating the public to the necessity and convenience of the bus, so that now the people are reluctant to accept any program which would do away with buses. They are in sympathy with the bus men. Furthermore, the bus men are not willing to sell out their lines and no cities can compel them to do so. The trolley employes have agreed to accept the company compromise of 20 per cent increase in wages, with a promise of better working conditions, but the trolley officials refuse to run their cars until the bus competition is eliminated.

The outcome of this situation will be keenly watched by all concerned, and the decision will rest largely with the public. One thing is certain that if the trolley company looked upon the bus sometime ago as a unit of transportation which it should have acquired under its own rights, the present situation would probably not have occurred.

Lower the Price

WHEN Governor McMaster, of South Dakota, came into the market a few weeks ago with carloads of low priced gasoline he started something. The result of his actions has precipitated a gasoline price war and a nation-wide investigation to determine whether the price reductions subsequently made are part of the program of the larger oil interests to put a large number of the smaller interests out of business.

The large oil producers state that the reduction in price is simply the result of over-production and nothing else. Statistics show that there is more gasoline available now than ever before, and that consumption has not kept up with production even though the number of gasoline propelled vehicles is constantly increasing.

One thing is certain, the average truck and bus owner will welcome any reduction in the price of gasoline. Lower priced gasoline will stimulate demand in the passenger car field, and in the commercial car industry will do much toward reducing the cost of transporting the millions of tons of goods over the highways, much to the advantage of the consumer. It is our belief that the surplus which is now concerning the large oil interests could readily be reduced by lower prices. Gasoline is one whose essentials to humanity which should be supplied at the lowest price consistent with a fair profit. Control and manipulation for private gain should not be tolerated.

Detailed Motor

These Tables Consist Only of Specifications Received Directly From the Manufacturer. Listed Are Either Specially Designed Bus

Line Number	TRADE NAME AND NUMBER	Capacity Seats	Chassis Price	UNLOADED WEIGHT (In Pounds)			GENERAL DIMENSIONS								ENGINE DETAILS									NORMAL SPEED M.P.H.	
				Chassis Only	Chassis and Body	Recommended Body Weight	Wheelbase	Tread, Front	Tread, Rear	Floor Height	Turning Radius	Over-All Length	Over-All Width	Clearance from Ground	Make and Model Number	Bore and Stroke	Horsepower	Valve Arrang'mt	Fuel Feed	Lubrication	Carburetor (Make)	Radiator (Make)	Ignition System	High	Low
															1			2	3	4	5	6	7		
1	Acme	30	....	6900	9900	3000	200	58½	74	27	38	312	90	5	Cont L4	4½x5½	32.4	L	V	F	Zen	Own	Eis	30	5.7
2	Avery	18	....	2800	4000	.....	129	56	56	32	42	.....	.....	.....	Own 6	3 x4	21.6	L	V	S	Strm	Own	KW	20	6
3	Belmont	30	....	5000	72	2200	184	....	....	20	27	262	86	9	Buda EBU	4½x5½	28.9	L	V	F	Zen	Own	Bos	25	3
4	Bethlehem KN	16	1385	2650	.....	800	125	56	56	....	26	175	64⅞	....	Own	4 x5¼	25.6	L	V	F	Zen	GO	Bos	35	....
5	Bethlehem GN	25	2185	4100	.....	1200	138	56	57¼	....	25	208¼	66¼	....	Own	4 x5¼	25.6	L	V	F	Zen	GO	Bos	25	....
6	Bethlehem HN	35	2985	5250	.....	1500	145	56	59½	....	26	226¼	70	....	Own	4 x5¼	25.6	L	V	F	Zen	GO	Bos	25	....
7	Brinton	25	3400	.....	.....	.....	Op	68	68	36	30	Op	....	12	Cont	4½x5½	32.4	L	G	F	Strm	Chic	Bos	....	....
8	Brockway	25	....	6400	9530	3130	185	66½	71	28½	31⅔	324¼	7	10	Buda	4½x6	32.4	L	V	F	Zen	GO	Bos	25	5
9	Day-Elder 20	22	....	3950	.....	2500	168	56	58	32	30	237	70½	10½	Buda HTU	4¼x5½	28.9	L	V	F	Zen	Bus	Eis	35	10
10	Day-Elder 25	25	....	5000	.....	3000	180	58	58½	32	27	260	75½	10	Buda HTU	4¼x5½	28.9	L	V	F	Zen	Bus	Eis	35	7
11	Day-Elder 30	30	....	6000	.....	3500	192	68½	74	25	25	271½	90	7	Buda YBU	4½x6	32.4	L	V	F	Zen	Bus	Eis	35	7
12	Defiance GL-3	19	....	.....	.....	.....	140	56	56	28	....	210	84	8	Cont 8 R	3⅜x4½	27.3	L	V	...	Zen	Chic	Bos	30	5
13	Denby 188	26	....	6540	.....	.....	188	72	71	22	61	.....	.....	.....	Cont 6B	3¾x5	.....	...	V	...	Zen	Lng	Bos	47	9
14	Denby 216	30	....	6860	.....	.....	216	72	71	22	73	.....	.....	.....	Cont 6B	3¾x5	.....	...	V	...	Zen	Lng	Bos	47	9
15	Fageol Inter City	22	....	.....	8700	.....	218	70	70	21	38	306	....	7½	HS 50	4¼x5½	28.9	H	V	F	Zen	Lng	Del	30	6
16	Fageol Street Car	29	....	.....	9600	.....	218	70	76½	20	38	312	89	7½	H.S. 50	4¼x5½	28.9	H	V	F	Zen	Lng	Del	35	7
17	Federal	18	....	.....	.....	1800	160	56	59½	28	28	238½	....	10	Cont 6M	3⅜x4½	27.3	L	V	F	Zen	Lng	Eis	35	7
18	Federal	25	....	.....	.....	2500	190	60	60	30	28	266⅜	....	10	Cont 6B	3¾x5	33.7	L	V	F	Zen	Mod	Eis	35	6
19	Fifth Avenue J	25	....	4800	6900	.....	173	63 3/16	73¾	25	62	.....	.....	.....	Mol	4 x6	....	7	V	...	Zen	.....	Eis	21	5
20	Ford	..	....	.....	.....	.....	123	56	56	....	....	.....	.....	.....	.....	3¾x4	22.5	L	G	S	Hol	Own	Own	30	3
21	F. W. D. B	29	4200	6500	10000	.....	156	56	56	42	30	.....	.....	.....	Wis A	4¾x5½	36.1	T	V	F	Strm	Lng	Eis	22	....
22	Garford 51D	29	4350	6300	9400	3100	189	68	72	28½	30	295	91	7	Buda YBU	4½x6	32.4	L	V	F	Strm	Own	Rm	35	5
23	Garford 226	25	3750	4350	6750	2400	181	56	65	32	25	262	76	9½	Buda EBU	4¼x5½	28.9	L	V	F	Strm	Own	Spl	35	5.4
24	Graham CA	16	1325	2625	4250	1600	140	56	56	34	24½	234	77	10½	Dodge	3⅞x4½	24.1	L	V	S	Stew	McC	N.E	25	....
25	Indiana 20	22	....	5300	8900	3600	174	60	68	35	29	252¾	89½	9½	Own 38	4⅛x5½	27.2	L	V	F	Strm	McC	Eis	23	6
26	Indiana 25	26	....	5850	9950	4100	193	60	68	35	32	279¾	89½	9½	Own 38	4⅛x5½	27.2	L	V	F	Strm	McC	Eis	23	6
27	International S	14	....	2750	3500	750	124	56	56	....	20	.....	.....	.....	Lyco KB	3½x5	19.6	L	G	FS	Ens	Lng	Con	25	5
28	Kissel	18	....	5200	7780	2400	202	64½	66	24	....	252	76	8	Own 4–36	4¼x5½	28.9	L	V	S	Strm	Spar	Bos	40	....
29	Larrabee X 2	14	....	3350	4750	.....	155	56	56	29	28	216	70	11	Cont 8R	3⅜x4½	27.3	L	V	F	Zen	Fed	Bos	40	4
30	Larrabee XJ 2	21	....	4300	6100	.....	168	57	62	29	34	250	90	9	Cont 8R	3⅜x4½	27.3	L	V	F	Zen	Fed	Bos	30	3
31	Luedinghaus	..	2890	4400	5600	1200	170	....	58	44	....	.....	.....	11¾	.....	4¼x5¾	28.9	L	G	S	Sheb	Brm	Spl	20	3
32	Mack AB	25	4435	6075	9075	3000	195	58½	60¼	31¾	37½	300	88	9½	Own	4¼x5½	34	L	V	FS	Zen	Own	Spl	21	4.5
33	Mason	21	1320	3100	5800	2700	150	56	56	30	....	246	85	10	Her	4 x5	....	L	G	FS	John	.....	AuL	35	12
34	Master JDB	22	4290	5600	8900	3300	170	59	59	26	29½	.....	.....	.....	Buda GBU	4 x5¼	25.6	L	V	FS	Zen	Chic	Eis	25	6
35	Master DDB	30	4890	6000	9500	3500	194	59	59	26	33½	.....	.....	.....	Buda EBU	4¼x5½	28.9	L	V	FS	Zen	Chic	Eis	25	5
36	Menominee DB	25	....	5900	9100	3200	186	68	73	26	30	256	86	10	Wis TAU	4 x6	25.6	L	V	F	Strm	Own	....	32	6
37	Moreland RC	16	2280	3850	5850	2000	180	56	57¼	23½	....	.....	.....	7	Her O	4 x5	25.6	L	G	F	Zen	Own	Spl	25	....
38	Moreland EC	..	3780	4590	7590	3000	178	61	58	24½	....	.....	.....	8½	Cont K4	4⅛x5¼	27.3	L	V	F	Strm	Own	Spl	25	....
39	Moreland AC	25	4700	5660	9160	3500	187	68	69	25½	....	.....	.....	9	Cont L4	4½x5½	32.5	L	V	F	Strm	Own	Spl	25	....
40	Olds	..	....	2390	.....	.....	128	56	56	....	....	.....	.....	10½	Own T	3¾x5¼	21.7	H	V	FS	Zen	Har	Rm	....	....
41	Parker B 23 B	16	1400	2700	4600	2000	131	58	58	30	21	204	66	10	Buda WTU	3¾x5⅛	22.5	L	V	F	Zen	Own	Wis	35	9
42	Parker E 23 B	18	2500	3700	5800	2100	150	58	58	28	25	218	66	10	Wis SU	4 x5	25.6	H	V	F	Strm	Own	Wes	40	10
43	Phila. Motor Coach P	65	6500	8750	14650	5900	216	64.5	75	20⅛	35	334½	90	8	Own	4 x6	38.4	H	V	F	Zen	GO	NE	25	....
44	Ruggles	16	1445	3000	5000	.....	138	56	56	28	27	206	73	10¾	Her O	4 x5	25.6	L	V	F	Strm	Per	Rm	35	8
45	Schwartz 65 B	35	4075	5925	8700	2775	184	58½	58½	30	37	270	75½	9½	Buda EBU	4¼x5½	28.9	L	V	F	Zen	Own	Bos	30	3
46	Selden	..	4850	7200	10200	3000	195	68	74	29½	33	309	91	7	Cont L4	4½x5½	32.4	L	V	F	Zen	Lng	Eis	25	6.27
47	Service 61B	40	....	5850	.....	.....	192	58	66	30	24	276½	80	8½	Buda EBUI	4¼x5½	43.4	L	V	F	Strm	McC	Eis	25	4½
48	Service 25B	20	....	3600	.....	.....	159	56⅝	57⅛	28	18	221	65⅝	8	Buda WTU	3¾x5⅛	33.8	L	V	F	Opt	Lng	Rm	35	6
49	Sterling GB1	21	4050	4800	7000	2200	156	56	58	29⅜	....	234	70⅝	10	Wau FU	4 x5⅝	25.6	L	V	F	Zen	Own	Bos	28	....
50	Sterling GB2	29	4375	5700	8500	2800	174	60¼	58½	29⅜	....	263	75½	10	Wau CU	4⅜x5¾	30.6	L	V	F	Zen	Own	Bos	28	....
51	Stoughton	16	2400	3300	5520	2220	162	56	56	30	27	224	80	11¼	.....	.....	....	H	V	F	Zen	Chic	Rm	34	8½
52	Union FWC	30	....	6000	10100	4100	200	64½	62	29	....	316	95	....	Wis TAU	4 x6	25.6	L	V	F	Sheb	GO	Eis	30	....
53	United 30 B	..	....	3600	5100	1500	163	56	60	....	....	.....	.....	.....	Her	4 x5	25.6	L	V	F	Zen	Per	Bos	45	5
54	U. S. No. 301	18	1875	3200	5700	.....	138	56	56	29	22	212	70	9¾	Buda WTU	3¾x5⅛	22.5	L	V	F	Strm	Lng	Bos	35	9
55	U. S. No. 201	18	1875	3200	5700	.....	138	56	56	29	22	212	70	9¾	Buda WTU	3¾x5⅛	22.5	L	V	F	Strm	Lng	Bos	35	9
56	U. S. No. 202	26	2225	3800	6500	.....	162	58	56	31	28	267	88	10½	Buda WTU	3¾x5⅛	22.5	L	V	F	Strm	Lng	Bos	30	8
57	White 50	..	....	5395	.....	.....	198	58½	60⅜	28¼	36	276	74	....	Own	4¼x5¾	28.9	L	V	F	Zen	.....	.....	.....	....

NOTE: Manufacturers and addresses of above listed on page 50.

KEY OF

1 ENGINE:
Beav—Beaver
Buda
Cont—Continental
GBS—Golden, Belknap & Swartz
Gr-B—Gray-Beal [Her—Hercules
Hin—Hinkley
H-Sp—Herschell-Spillman
HS—Holl Scott
LeR—Le Roi
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Mol-Moline
Sup—Supreme
Wau—Waukesha
Wei—Weidely
Wis—Wisconsin

2 VALVE ARRANGEMENT:
H—Overhead
L—ELL Head
S—Sleeve
T—TEE-Head

3 FUEL FEED:
G—Gravity
P—Pressure
V—Vacuum

4 LUBRICATION:
FS—Force and Splash
F—Force Feed
S—Splash

5 CARBURETOR:
Bent—Bennett
Cart—Carter
Eag—Eagle
Ens—Ensign
Hol—Holly
John—Johnson
King—Kingston
Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

6 RADIATOR (MAKE):
BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
SJ—Shotwell Johnson
Spar—Sparton
Spec—Special
Spli—Splitex
Stn—Standard
Whe—Wheeler

7 IGNITION SYSTEM:
Amr—American Swiss
Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Ber—Berling
Bos—Bosch
Con—Connecticut
Del—Delco
Eis—Eisemann
Kin—Kingston
KW—K. W. Ignition Co.
Lor—Louraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
RBo—Robert Bosch
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

8 BATTERY (MAKE):
Exl—Exide
Gl—Globe
Gld—Gould
Hob—Hobbs
POL—Prest-O-Lite
USL—U. S. Light & Heat
Wes—Westinghouse
Wil—Willard

9 ENGINE STARTER:
AC—Allis-Chalmers
AK—Atwater Kent
AuL—Auto-Lite
Bj—Bijur
Bos—Bosch
Del—Delco
Dy—Dyneto
GD—Gray & Davis
LN—Leece-Neville
NE—North East
Rm—Remy
Sim—Simms
USL—U. S. L.
Wes—Westinghouse
Wg—Wagner

10 GENERATOR:
Bos—Bosch
Wes—Westinghouse
Rm—Remy
Bj—Bijur
NE—North East
AuL—Auto-Lite
Dy—Dyneto
Eis—Eisemann
Del—Delco
LN—Leece-Neville
GD—Gray-Davis
Spl—Splitdorf

11 CLUTCH (MAKE):
B.B—Borg & Beck
B-LI—Brown-Lipe
Covt—Covert
Det—Detlaff
DG—Detroit Gear & Mach.
Dod—Dodge
Full—Fuller
Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Mun—Muncie
T-D—Twin Disc
W-Gr—Warner Gear

12 GEARSET:
B-LI—Brown-Lipe
Cott—Cotta
Covt—Covert
Det—Detroit
Dod—Dodge
Dun—Dundore
Durs—Durston
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Mun—Muncie
W-C—Warner Corporation
W-Gr—Warner Gear

All Manufacturers Producing Motor Bus Chassis Not Represented

Bus Specifications

Every Commercial Car Manufacturer in the Country Was Solicited and the Jobs Chassis or Those Recommended for This Service

Line Number	ELECTRICAL EQUIPMENT					TRANSMISSION				Universal (Make)	Springs (Make)	Brakes (See Note)	FRONT AXLE	REAR AXLE			Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS			
	Battery (Make)	Model No.	Volts and Amp. Hr.	Starter (Make)	Generator (Make)	Clutch (Make)	Make and Model Number of Gearset	Location	Speeds				Make and Model Number	Final Drive	Make and Model Number	Type				*Pneumatic †Dual ‡Solid Front	*Pneumatic †Dual ‡Solid Rear	Wheels (Make)	Rim Equipment
	8			9	10	11	12	13		14	15	16	17	18	19	20			21			22	23
1	Wil	SJRT4	6–111	Del	Rm	B.B.	Cott RU	U	4	Bld	Det	A	1540 B	W	6511 S	F	6.8	35.36	Ros	.....	.....	Bim	Fir
2	.....	.....	.....	Wis	.....	Own	Own	U	3	Pet	Math	.....	Own	I	Own 2-L	D	8.	26.66	Ros	34x5*	34x5*	StM	Gdy
3	USL	Spec	12–175	Bos	L.N.	B-Li	B-Li 55	U	4	Spic	Math	A	Tim 1550	W	Tim 6511	...	6.1	.....	Ros	34x7*	34x7*	E&O	Fir
4	POL	613SHC	.....	G.D.	G.D.	B.B.	Det	U	3	Spic	Math	A	Stan 3070	S	Eat 1000	½	6.13	19.6	Ros	.....	.....	.....	Fir
5	POL	613 SHC	.....	G.D.	G.D.	B.B.	Det	U	3	UP	Math	A	Shel 35 FA	R	Wis 66A	½	7.75	24.8	Lav	.....	.....	.....	Fir
6	POL	613SHC	.....	G.D.	G.D.	Full	Full	U	4	UP	Math	A	Shel 3430	R	Wis 88E	½	8.67	41.56	Lav	.....	.....	Smi	Fir
7	Exi	.....	.....	Del	.....	B-Li	B-Li 50	U	4	Spic	Phil	A	Tim	W	Tim	...	Opt	Opt	Ros	Opt	Opt	Hoo	.....
8	Exi	.....	12	L.N.	L.N.	B.L.	B-Li 55	A	4	M-E	Mar	B	Shul 610 B	I	Clark 3DSp	D	7.	37.45	Gem	.....	.....	Bud	Fir
9	Wil	SJRT 6	6–153	Bos	Bos	B-Li	B-Li 35	U	3	Hart	Shel	A	Col 7018	W	Tim 6460	½	6	20.2	Gem	36x6	36x7	.....	Fir
10	Wil	SJRT 6	6–153	Bos	Bos	B-Li	B-Li 51	U	4	Hart	Shel	A	Col 8513	W	Tim 6560	F	6.8	36.4	Gem	36x6	40x8	.....	Fir
11	Wil	SJRT 6	6–153	Bos	Bos	B-Li	B-Li 51	U	4	Sned	Shel	A	Shul 610	W	Tim 6511S	F	6.8	36.4	Gem	36x6	36x6†	.....	Fir
12	Wil	SJRT 4	6	Bos	Bos	Full	Full SU 1	U	3	Spic	Det	A	Col 7000	B	Eat 1000	F	6.14	.....	Lav	32x6*	34x7*	StM	Fir
13	Wil	.....	6–200	Bos	Bos	B-Li	B-Li 4	...	...	.....	Det	A	Shul	I	Clark	...	.....	.....	Ros	36x6*	36x6†	Bud	.....
14	Wil	.....	6–200	Bos	Bos	B-Li	B-Li 4	...	...	.....	Det	A	Shul	I	Clark	...	.....	.....	Ros	36x6*	36x6†	Bud	.....
15	Exi	.....	.....	Del	Del	B-Li	B-Li 50	U	4	Spic	Math	A	Tim 1524	W	Tim Spec	F	.....	.....	Ros	36x6*	38x7†	Bud	.....
16	Exi	.....	.....	Del	Del	B-Li	B-Li 50	U	4	Spic	Math	A	Tim 1524	W	Tim Spec	F	.....	.....	Ros	36x6*	36x6†	Bud	.....
17	Exi	3LXRE-25	6–185	Rm	Rm	B.B.	Own	A	4	Opt	Math	A	Own	W	Tim 6460	½	5.2	26.	Gem	32x6*	34x7*	Smi	Fir
18	Exi	3LXRE-25	6–185	Rm	Rm	B.B.	Det R	A	4	Opt	Math	A	Own	W	Tim 6560	F	6.75	39.8	Gem	32x6*	36x8*	Smi	Fir
19	.....	.....	6–170	.....	Opt	.....	.....	...	...	.....	Tut	C	.....	W	.....	...	.....	.....	Ros	34x4	34x6	.....	.....
20	Own	.....	6–80	Own	Own	Own	Own	U	...	Own	Own	B	Own	B	Own	½	7.25	.....	Own	.....	.....	Own	Opt
21	Wil	.....	12–85	NE	NE	HS	Cott	A	3	Bld	Tut	B	Own B	B	Own B	F	7.35	29.	Ros	.....	.....	Sch	Fir
22	Wil	STRN 6	6–190	AtK	Rm	Own	Own	A	4	Spic	Per	B	Tim 1550	W	6511 B	F	6.	.....	Ros	36x6*	36x6†	Day	Fir
23	Exi	3XC-15-1	6–175	AtK	AtK	Own	Own	A	4	Spic	Per	A	.....	W	Tim 6460	½	4.85	.....	Ros	30x5*	30x5†	Bud	Fir
24	Exi	9318	12–50	N.E.	N.E.	Own	Own	U	3	.....	.....	A	Own	B	Own	...	6.29	26.23	Own	33x4½*	36x6*	.....	.....
25	Wil	STRN 6	6–157	Wes	Rm	B.B.	B-Li	A	...	.....	Shel	A	Shel D 370	W	Shel W 103	½	7.75	25.5	Woh	.....	.....	Bud	Fir
26	Wil	STRN 6	6–157	Wes	Rm	B.B.	B-Li	A	...	.....	Shel	A	Shel D 370	W	Shel W 21	½	7.75	25.5	Woh	.....	.....	Bud	Fir
27	POL	613RHN	6–100	AuL	AuL	Mun	Mun	U	3	.....	S.S.	A	Own	I	Torb	D	6.3	25.2	CAS	32x4½*	32x4½*	.....	.....
28	Wil	SJRT 6	6–153	Rm	Rm	B-Li	B-Li 35	U	4	Spic	Math	A	Shul 610	R	Wis 60B	...	5.8	19.08	Ros	34x7*	34x7*	Whit	Gdy
29	Exi	3XE-D	6	Bos	Bos	B-Li	B-Li 30	U	3	Sned	Shel	A	Sals	B	Sals	¾	5.9	25.	Gem	34x5*	34x5*	Bud	Fir
30	Exi	3XE-D	6	Bos	Bos	B-Li	B-Li 30	U	3	Spic	Shel	A	Shel	W	Shel	½	7.6	31.	Gem	36x6*	36x6*	Smi	Fir
31	Exi	.....	6–150	Dy	Dy	B.B.	Det	U	3	Spic	Tut	A	Shul 510	W	Wis	½	Opt	42.	Lav	36x6*	40x8*	Bim	Fir
32	Exi	6LXRE13	12–120	L.N.	L.N.	Own	Own	U	4	Spic	Mar	B	Own	R	Own	F	6.67	32.3	Own	34x5	34x5†	Jon	.....
33	USL	.....	6–120	AuL	AuL	Hoos	W-Gr	A	3	Spic	Arm	A	Fli	B	Fli	F	.....	.....	Lav	33x5*	33x5†	.....	Fir
34	Wil	.....	12	Wes	Wes	Full	Full TU 3	U	3	Spic	Det	B	Shul 610	R	Walk 2 A	F	7.25	22	Ros	36x6*	40x8	StM	Fir
35	Wil	.....	12	Wes	Wes	Full	Full GU 7	U	4	Spic	Det	B	Shul 610	R	Walk 25 A	F	7.66	37	Ros	36x6	40x8	StM	Fir
36	Wil	SJR4	6–125	Bos	Bos	Det	Cott AU	U	4	Spic	Tut	A	Tim 1550	R	Wis 120 K	½	6.16	32.06	Ros	36x6*	36x6†	Ind	Fir
37	Hob	6HTXR15A	6–140	AuL	.....	B-Li	B-Li 30	U	3	Pet	US	A	Tim 1250	B	Tim 5512	½	5.5	22	Ros	32x6	32x6	Own	Gdy
38	Hob	6HTXR15A	6–140	Opt	Spl	B-Li	B-Li	U	4	Pet	US	A	Tim 1550	W	Tim 6410	½	6.	32.1	Ros	34x5*	34x5†	Bud	.....
39	Hob	6HTXR15A	6–140	Opt	Spl	B-Li	B-Li	U	4	Pet	US	A	Tim 1550	W	Tim 6511	F	6	32.1	Ros	36x6*	36x6†	Bud	.....
40	Wil	SJR4	6–80	AuL	Au-L	B.B.	Mun	U	3	Spic	Per	A	Torb	I	Torb	D	6.5	10.03	Jac	.....	.....	AuW	Jax
41	Gl	611	6–80	Wes	Wes	Full	Full SU 2	U	3	.....	Tut	A	Fli 72BA80	B	Fli 72BA10	F	5.5	22.	Lav	32x6*	32x6*	Whit	Fir
42	Gl	611	6–80	Wes	Wes	B-Li	B-Li 30	U	3	.....	Tut	A	Cont 2001	B	Fli 72BA10	F	4.9	20.	Lav	32x6*	32x6*	Whit	Fir
43	.....	.....	12180	NE	NE	180	MM	A	4	Spic	Shel	A	Shul	...	Atl	...	7.	28.	Ros	34x6‡	34x6†	Ind	.....
44	POL	613RHN	6–100	Rm	Rm	B-Li	B-Li 30	U	3	Spic	Det	A	Col 5000	B	Col 52000	¾	5.13	21.	Jac	34x5*	34x5*	Nor	Fir
45	POL	611SHC	6–90	Bos	Bos	B-Li	B-Li 55	A	4	M-E	Row	A	Tim 1544 B	W	Tim 6560	F	6.5	34.8	Ros	36x6*	36x6*	Bud	Fir
46	POL	615 KPN	6–200	N.E.	N.E.	B-Li	B-Li	A	4	Spic	S.S.	A	Tim 1550	W	Tim 6511	F	7.75	31.	Gem	36x5	36x5	Arc	Fir
47	Wil	SJRT 6	6–166	Rm	Rm	B.B.	B-Li 35	U	4	Opt	Shel	A	Tim 1544	W	Tim 6560	F	6.75	36.12	Ros	32x6*	32x6†	Day	Fir
48	Wil	SJRT 4	6–120	Rm	Rm	B–Li	B-Li 31	U	3	M-E	Shel	A	Shul 312	B	Eat 1500	½	6.85	32.8	Ros	30x5	32x6	Opt	Fir
49	Gld	ASL681	6–81	Cos	Bos	B-Li	B-Li 35	U	4	Spic	Math	A	Tim 1452	W	Tim 6460	½	6	32	Ros	35x5*	35x5†	Bud	Fir
50	Gld	ABL681	6–81	Bos	Bos	B-Li	B-Li 50	U	4	Spic	Math	A	Tim 1544 B	W	Tim 6560	F	6	32	Ros	36x6*	36x6†	Bud	Fir
51	Wil	SJRN 3	6	Rm	Rm	B-Li	B-Li 30	U	3	Pick	Own	A	Col 5000	B	Col 52000	¾	5.87	21.9	Ros	34x5*	36x6*	Bim	Gdy
52	Exi	6LX-RE9	.....	L.N.	L.N.	Full	Full GU	...	4	.....	Math	B	Shul 650 B	R	Walk 25 A	F	6.95	.....	Jac	38.7	42x9	Smi	Gdy
53	Wes	.....	6–20	Bos	Bos	Full	B-Li 30	U	3	Spic	Det	A	Shul 310	B	Col 52000	F	5.1	20.8	Lav	32x6	32x6	Whit	Fir
54	POL	611KPN	6–120	Bos	Bos	Full	Full SU2	U	3	Bld	Shel	A	Shul 250	B	Clark B	½	5.5	22	Lav	34x5*	36x6*	Sch	Fir
55	POL	611 KPN	6–120	Bos	Bos	Full	Full SU 2	U	3	Bld	Shel	A	Shul 250	B	Clark B	½	5.5	22.	Lav	34x5*	36x6*	Sch	Fir
56	POL	611 KPN	6–120	Bos	Bos	Full	Full LTU-5	U	3	Bld	Shel	A	Shul 350	I	Clark ID	D	7.6	30.4	Lav	35x5	38x7	Sch	Fir
57	.....	.....	12	L.N.	L.N.	Own	Own	U	4	.....	.....	B	Own	B	Own	¾	6.83	28.2	Own	36x4	36x7	.....	.....

ABBREVIATIONS

Own—On. or Own; Optional—Op. or Opt.)

13 LOCATION OF GEARSET:
A—Amidships
J—Unit with jackshaft
R—Rear
U—Unit with engine

UNIVERSAL:
Acm—Acme
Arv—Arvac
Bld—Blood-Brothers
Det—Detroit
Hart—Hartford
KB—Kinsler-Bennett
MM—Mechanics
M-E—Merchant & Evans

14
Nor—Norwalk
Pet—Cleveland Universal
Pick—Pick
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

SPRINGS:
Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans

15
Cham—Champion
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
IC—Iron City
Kal—Kalamazoo
Lah—Laher
Lig—Liggett
Mar—Maremont
Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
Phil—Phila. Springs
P.S.—Point Spring Co.
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
SS—Standard Steel
Ster—Sterling
Tut—Tuthill
US—United States
Vul—Jenkins Vulcan

BRAKE (LOCATION):
16 A—Rear Wheels entirely
B—Drive Shaft and Rear Wheels
C—Front and Rear Wheel

FRONT AXLE:
Col—Columbia
Cont—Continental
Dod—Dodge
Fli—Flint

17
Sals—Salisbury
Sav—Savage
Shel—Sheldon
Shul—Shuler
Stan—Stan-Par
Tim—Timken
Torb—Torbensen
Vul—Vulcan

FINAL DRIVE:
B—Bevel Gear
C—Chain

18
I—Internal Gear
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

REAR AXLE (MAKE):
At—Atlas
Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton
Fli—Flint
Huck—Huck
IrM—Iron Mt.
LM—L M Axle

19
Russ—Russel
Sals—Salisbury
Shel—Sheldon
Stn—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbensen
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

REAR AXLE (TYPE):
F—Floating

20
D—Dead
½—Semi-Floating
¾—¾-Floating

STEERING GEAR:
CAS—C. A. S. Products Co.
Dit—Ditwiler
Dod—Dodge

21
Gem—Gemmer
Hin—Keystone Hindley
Jac—Jacox
Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
Woh—Wohlrab

WHEELS:
Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Bud—Budd
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
Dis—Disteel
E&O—Eberly & Orls

22
Hay—Hayes
Hoo—Hoopes Brothers
Imp—Imperial
Ind—Indestructible
Jon—Jones
Kel—Kelsey
MM—Michigan Malleable Iron Co.
Mot—Motor Wheel
Mun—Muncie Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Boyer
Sch—Schwarts
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Wal—Walker
Way—Wayne
Whit—Whitcomb
W-L—Waterhouse & Lester

RIM EQUIPMENT:
StM—St. Mary
Stn—Standard
Wal—Walker
Way—Wayne
W-L—Waterhouse & Lester

23
Bak—Baker
Cle—Cleveland
Det—Detroit
Fir—Firestone
Gdy—Goodyear
Hay—Hayes
Jac—Jackson
Jax—Jaxon
Kel—Kelsey
Mil—Miller

in This Table Are Invited to Send in Their Specifications

W. K. Kellogg Has All the Comforts of a Modern Home

A HOUSE on wheels or "sleeping coach" combining every modern convenience with the composite comforts of home, hotel and Pullman is the motor palace recently acquired by W. K. Kellogg, breakfast food magnate and world-traveler. The body was designed by the Bender Body Co., Cleveland, Ohio and mounted on a White Model 50 bus. It is furnished with comfortable sleeping berths, shower baths, ample cooking facilities and radio, which provides market news and entertainment. Innocent looking panels of mahogany here and there conceal scores of unlooked-for appointments.

The motor palace is finished in mahogany and the finest of leathers throughout. Entrance and exit may be through five doors, three on the right side and two on the left. The driver's compartment is separated by a sliding glass partition. The forward part of the car is equipped with four revolving chairs with adjustable backs, head rests and arms which can be quickly converted into full sized berths for two. The chairs are upholstered in taupe mohair plush with nickel fittings. Heavy adjustable curtains separate the sleeping quarters from the rear compartment as well as the berths. The forward section may readily be transformed into a cozy dining room by the introduction of a folding table which, when not in use is concealed in a panel at the side of the car. Ample light is provided by dome lamps and separate reading lamps at each chair. A dictograph permits communication with the driver without opening windows.

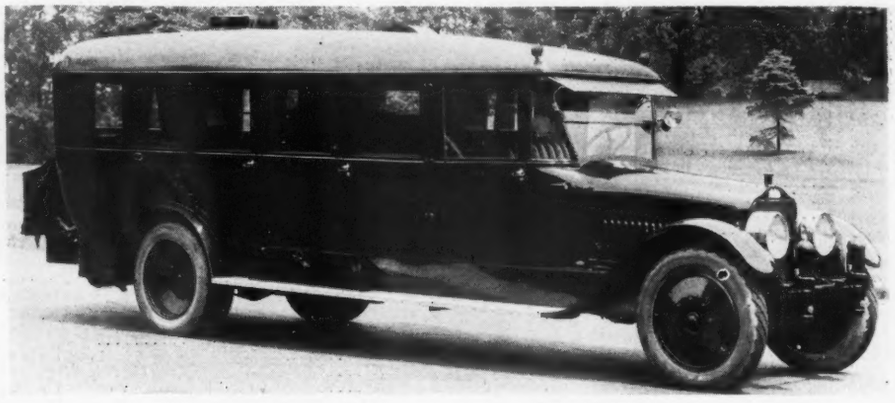
The coach is designed for use in winter as well as summer and passengers need not be concerned by weather conditions. Rotating fans keep the car cool in warm weather while heaters set flush with the floor and connected to the exhaust pipe of the engine keep the car warm on the coldest day.

Further inspection of the rolling home discloses wardrobe and linen closets, oil and electric stoves, sink, faucets for hot and cold water, an ice making plant, iceless refrigerator, a china closet, a nickel hand basin, enclosed chemical toilet, French mirrors and dust-proof screens of fine nickel mesh. Several electrical connections are conveniently located for curling irons, etc.

All kitchen utilities and other appointments are concealed when not in use by mahogany cabinets and closets so that the general effect is of pleasing cabinet work and upholstery.

The water supply system for the entire coach is provided by a 40 gallon tank, pressure being maintained at all times by means of a pump driven by a power take-off on the transmission. An electric power plant in the rear section furnishes current for the lamps, stoves and fans.

Installed outside at rear of the car is an iron folding frame which can be used to carry light baggage and when extended forms a large bed frame, which with mattress and rain cover offers additional sleeping accommodation.



Kellogg's "Sleeping Coach." It is a White Chassis With Bender Body

Views of the Sumptuously Furnished Interior

Continental Announces Specially Designed Bus Axle

A NEW axle developed especially for the 18 to 25-passenger motor bus is now being introduced by the Continental Axle Co., Edgerton, Wis. Although this axle known as the Model 600 was designed for bus use it is explained as being equally adaptable to the 2 to 2½ ton heavy-duty motor truck.

This axle was designed in accordance with the requirements of the bus or coach chassis, which is distinctively different from those of the motor truck. For example, the balance of the Continental Axle line for trucks is built in the Plain Elliott type, in the coach axle where a low frame demands a spring pad decidedly lower than the wheel spindle the Reversed Elliot construction is now used. It is pointed out that in this Reverse Elliott type axle only can a clean-cut steering arm design can be secured and a low pad maintained.

Another characteristic is the center pivot steer which was adopted for three reasons—safety, easy steering, and ready adaptation of brake. In the Plain Elliott type of axle, where the tread line is some distance from the steering pivot, a blow-out in a front pneumatic tire at a high rate of speed has a tendency, by reason of this leverage, to ditch the vehicle. In the center pivot steer the axis of the steering pivot produced falls practically at the center of the tread, and with no leverage on the steering mechanism this danger is eliminated. Also the absence of this leverage, in conjunction with the Balcrank tie rod, produces free steering qualities, a factor of considerable consequence in bus or coach operation. This center pivot steer for the same reason is also vital in a brake front axle where equalization is more or less imperfect.

The knuckle pin layout is similar to that embodied in the U. S. A. class "B" front axle, and provides reservoir lubrication of these wearing surfaces. The knuckle pin is hollow, and once filled with oil transmits it to the thrust washers and bushings through capillary oil holes and spiral grooves. Knuckle pin bushings and thrust washers are of large size, supplying low area pressures at these points of wear.

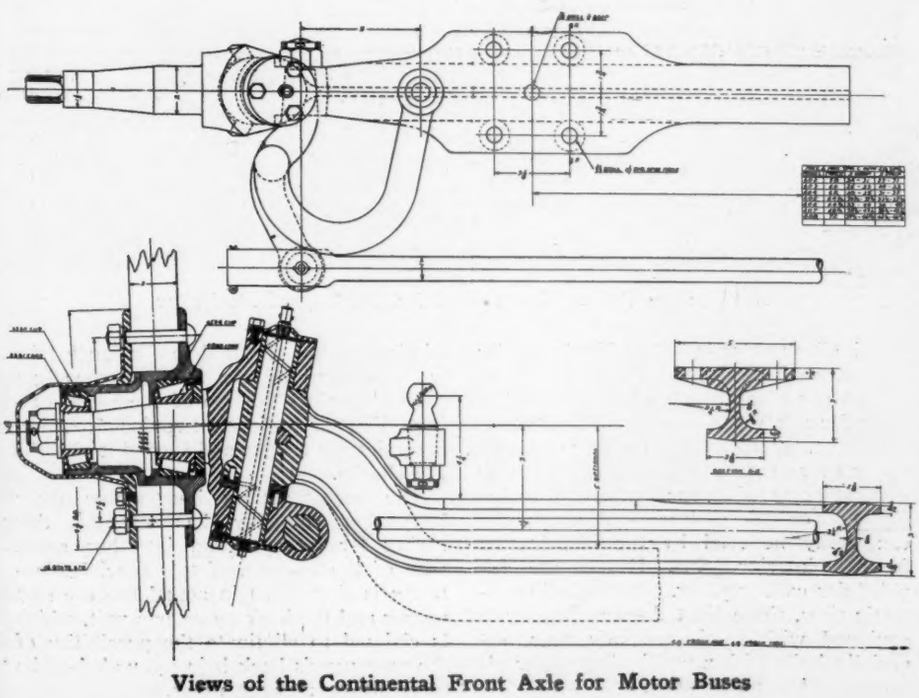
The axle center section is of such character as to properly absorb the unusual stresses induced through the low pad and the braking torque. The spring pad is exceptionally wide and is forged flat, eliminating the spring chair.

The axle is of peculiar interest, not only because of its conformity to coach requirements but by reason of the interchangeability of parts which has been developed, which reduces the number of parts required.

The following is a synopsis of pertinent factors in design not mentioned hereinbefore and a resume of material specifications:

Low spring pad, 3 or 5 in. drop; wide or narrow tread, maximum 68½ in., minimum 58 in.; standard SAE No. 6 wheel spindle and bearing layout; large size knuckle pin and knuckle pin parts; reservoir oiling of knuckle pin parts; ball and socket cross section; extra wide spring pad; and adaptability of front wheel brakes.

The axle center is a one-piece drop forging of SAE 1035 steel, heat-treated. Steering knuckle and arms are drop forging of SAE 3135 steel, heat-treated. Timken "V" series No. 4580 and No. 3381 wheel bearings are used. Hubs are Certified malleable and flanges and caps are pressed steel. Knuckle pin and steering balls are of 3½ per cent nickel steel, carbonized, hardened and ground. The thrust bearings of hardened bronze.



Views of the Continental Front Axle for Motor Buses

Corbin Speedometer for Buses

Bus investments are protected by maintaining accurate records of mileage and minimizing the abuses of careless and disinterested drivers. Records of mileage is necessary for systematic maintenance, inspection, and cost control.

Specially Designed for Bus Installation

The Corbin Screw Corp., New Britain, Conn., in its product the Corbin Speedometer, brings within reach of every bus operator the means of maintaining such a mileage record. The design of this meter is said to be such that shocks and vibration have no effect on the indication of speed. A steady and accurate indication is assured at all times.

The speedometer head can be furnished calibrated to either 30 or 60 m.p.h. The Odometer and speed indicating mechanism are housed within a seamless drawn brass cup of heavy gage. The dial is protected by a beveled plate glass face fixed in the housing by a weather proof joint.

The total Odometer records up to 99,999 miles and records regardless of the direction of rotation of the flexible driving cable, so that the instrument may be installed to either the right or left wheel of the bus, and the mileage is recorded when the bus is traveling in reverse gear or forward. All trip records can be instantly released by a slight pressure of the trip release plunger.

An optional and exclusive feature is the maximum speed hand and lock. The maximum speed hand is so constructed that it remains at the point of highest speed attained by the bus. The release plunger is provided with a lock so that the position of the hand may be secured for recording.

The Corbin Model B Truck Speedometer is adapted to all makes of buses. It is regularly furnished with a 4-in. head and for front wheel drive.

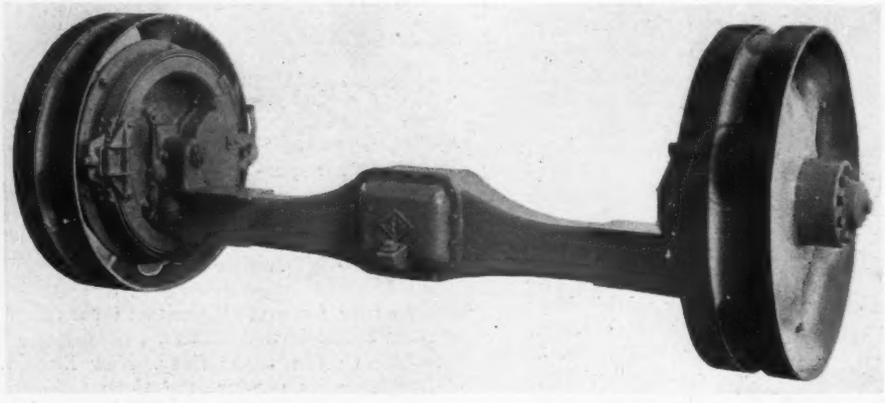
Atlas Makes Special Bus Axles

The accompanying illustration gives a detailed view of the Model LC8 axle, which together with the Model LC12 axle represents the latest efforts of the Atlas Axle Co., Wilmington, Del., in the rapidly growing bus field. The two types of axles were specially designed for bus service.

The Model LC8 axle is equipped with double brakes, which is a new development and meets the demand for full braking effect in the wheels. The construction eliminates the need for an auxilliary transmission brake. The 3 in. x 21 in. toggle actuated, internal expanding brakes, standard in the Atlas, is retained. In addition, and at the option of the buyer, an internal brake, 2 x 21¾-in., is furnished. This installation is shown in the illustration. With this combination the total effective breaking area is 595 sq. in.

The Model LC12 axle, which is standard equipment on the new Philadelphia Double Deck Motorbus is at the present time undergoing some revisions for future production to provide dual internal expanding brakes. The following is a brief resume of Model LC12 specifications:

Permissible Load on Spring Pads	12,000 lb.
Tread	75 in.
Overall Width	90 in.
Standard Gear Ratio	7.1 to 1
Optional Gear Ratio	6 to 1
Spring Centers, 3½ in. Springs	53 in. max.
Spring Pad Height	12¼ in.
Ground Clearance at Differential	5⅝ in.
Pinion Shaft End, S. A. E. Taper	1½ in.
Brakes, Dual Internal Expanding	3 in. x 24 in. and 2½ in. 24 in.
Wheels, Cast Metal for	34 in. x 6 in. dual solid tires.
Approximate weight with Wheels	1500 lb.
Lubrication	Oil thruout



Atlas Model LC8 Axle, Equipped With Double Brakes

Manley Equipment for Bus Service

The Manley Manufacturing Company, York, Pa., has included in its extensive lines products bearing directly upon the needs of bus repair shops and service. These products have been discussed in these columns from time to time. Among the units especially applicable are the 50 ton press for such heavy duty service as demanded by buses; wheel dolly for carrying heavy wheels from axle to tire press, which is not only a very useful labor saving device but which will also increase the dispatch of shop work; and heavy capacity engine stands that are essential and efficient for overhauling bus engines. In addition to the forgoing this company manufactures heavy-duty hoists for permanent attachment to the floor for heavy jobs such as are encountered in bus service.

Rochester Uses Selden Buses

Built on a special low-hung motorbus chassis, with full, flexible construction, special cushion wheels and tires, exceedingly comfortable seats, the four Selden buses negotiating on a beautiful boulevard betweer. Rochester and Pittsford, a suburb, provide their passengers with all the comforts desired. All the officers and directors of this bus service are Rochester men, who realized the necessity for such a line, and, who after a thorough investigation and experiment, decided on the Selden Unit 52, which is especially designed for this type of motorbus service.

One of the Selden Buses Used by the City of Rochester

The bodies are made by the Kuhlman Car Company of Cleveland.

Two steps lead into the body which has seats for thirty passengers. All seats are crosswise, except one on either side directly over rear wheel housing. Oversize generators provide excellent lighting inside and outside of buses. A newspaper can easily be read by the illumination from the interior lights. Heaters are provided for cold weather. Instead of pneumatic tires, these East Avenue Buses are equipped with semi-pneumatic tires, especially built with a cushioning power almost equal to pneumatics.

Seibel Air Springs for Buses

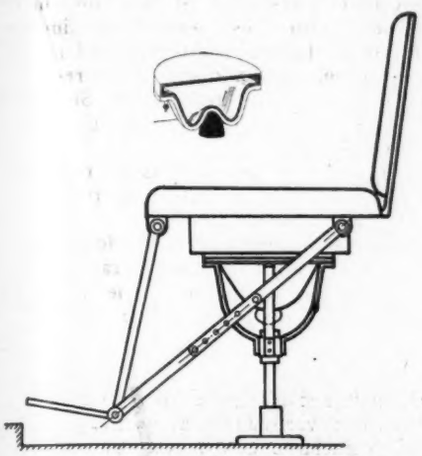
The Seibel air spring, which is really adaptable to any point requiring action, is especially noteworthy at this time in connection with bus seat cushioning. Briefly, it is claimed to equalize and absorb vibrations, jolts and shocks wherever used. It is manufactured by the Siebel Air Spring Co., Inc., 785 Market St., San Francisco, Cal.

The Seibel Air Spring consists of an inner tube, within a fabricated rubber cushion and a metal casing. A metal deformer at the bottom serves to fold the casing walls inwardly without cramping and in such way as to obtain the maximum wear from the casing. The amount of air pressure required in the inner tube is determined by the amount of weight exerted against the top of the metal casing. The air performs two function, first it carries the weight and second it absorbs the shocks.

Seibel Air Spring

The accompanying illustrations show how this company has adapted this spring for incorporation into bus seats. One of the features of this special adaptation is that when in actual use the seat proper and the back move as a unit, which is claimed to eliminate the possibility of the passenger's back being pounded while traveling over rough roads.

Although the inner tubes will require occasional replacing since they desulphurize in service, the outer casings will stand gruelling service over an indefinite period.



Illustrating the Principle of the Seibel Air Spring

United Motors Products Company Brings Out New Bus

The United Motor Products Company of Grand Rapids, Michigan recently added to its line of commercial vehicles, a new suburban bus to be known as the United Suburban Special.

Every detail making for the comfort and convenience of its passengers has been incorporated in this job. In it is combined the luxury of the Pullman parlor car with rapid and dependable transportation.

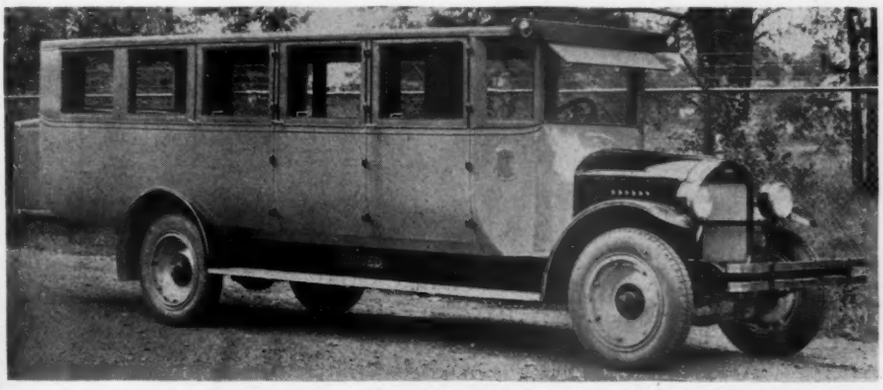
Twenty passengers are carried comfortably, all facing forward. The inside height is 50 in., outside 54 in.; width, inside, 66 in., outside, 74 in. A 34-in. space between the backs of the seats, insures ample knee room.

Cushions are bolstered by doubled coil springs and upholstered with fine quality curled hair and imitation leather. The floor is covered with battleship linoleum.

Ample ventilation is provided for by two Nicholas-Lintern roof ventilators as well as by the readily adjusted rattle-proof windows of plate glass.

The equipment is complete, comprising quality hardware throughout, 10-in. kick plates under each door, signal buzzer to driver's compartment, weather-proof windshield with visor, cowl ventilator, two green identification and route lights on sign panel, side and head lamps, spare tire carrier, dust-prof luggage compartment and smoking compartment.

On its long wheel base of 175 in., attractively painted a dust-proofed gray, the United Suburban Special presents an inviting and appealing appearance. It is powered by a United engine.



Latest Addition to the Line of the United Motors Products Co.

Fuller Makes Special Bus Units

Fuller & Sons Mfg. Co., Kalamazoo, Mich., is offering the bus branch of the industry transmissions specially designed for the bus chassis. Models SU, GU, and HU types, three and four speed gearsets, and some G-7, and H-1 amidship types are being offered.

The characteristics making for the adaptability of these models to the hard service of bus operation lies mainly in the use of ground gear teeth and special 3½ per cent nickle steel gears. Bearings are all anti-friction and most are annular ball types, which is stated to help keep down the gasoline per mile. Gear shifting is explained as being short, easy and smooth-acting. All sets are provided with openings for tire pump installation.

Western Folded Felt Channel

The Western Felt Work, 4031-4117 Odgen Ave., Chicago, Ill., is offering a product that will save considerable time in the fitting of glass into frames. The air chambers at the sides of the felt which receive the glass adapts itself to any thickness of the glass. It is stated that the elasticity of this felt endures permanent contact with even the thinnest pane.

This folded felt channel is stated to possess unusual wearing qualities not only sustaining the wrack of constant weaving always present in a moving vehicle but retaining at the same its shape and neat appearance in the sash. This feature is particularly noteworthy since the principal wear on a channel is along its sides and since the Folded channel is claimed not to harden and cause thumping and rattling.

For Specifications on Buses Refer to Pages 56 and 57

One Way of Advertising Bus Service

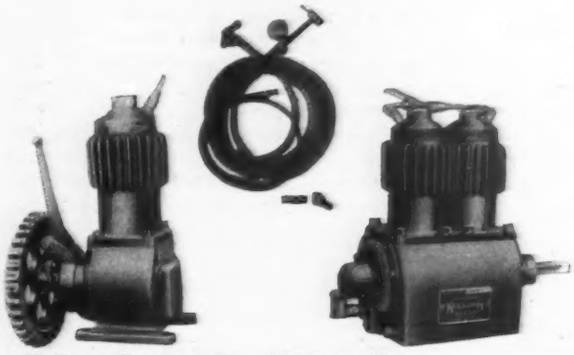
Large numerals on the baggage rack of the bus is the link between the bus management and the public. Note how the two spare tires are carried. The chassis is a White.

Ruggles Chanticleer Highway Parlor Car

This sixteen passenger deluxe coach made by the Ruggles Motor Truck Co., Saginaw, Mich, was specially built for luxurious highway travel. The low chassis, long wheelbase, long springs and special stabilators are pointed out as being the distinctive features making for real riding comfort. It is mounted on the Ruggles 20-A R chassis, has a commodious seating arrangement, adjustable plate-glass windows, exhaust heater, and large dustproof luggage carrier built into the rear.

Kellogg Power Driven Tire Pumps for Buses

The value of giant pneumatics have been proved, but their efficiency depends on one important factor, and that is proper inflation at all times. Proper inflation need not to be neglected today. The Kellogg Power Driven Tire Pump offered by the Kellogg Mfg. Co., Rochester, N. Y., when used as regular equipment on the bus or truck, stalled with a puncture miles away from a service station, will save the owner time money and annoyance. Rapid get-aways will also be appreciated by the passengers.



Kellogg One and Two Cylinder Tire Pumps With Equipment

Two sizes are offered, models 241 and 242. The first has only one cylinder and is for use on trucks equipped with tires from 6 to 8 in. cross section diameter. This pump has a bore and stroke of 2¼ x 2 in., respectively. Model 242 has two cylinders of same bore and stroke and is for use on trucks operating on tires of over 8 in. diameter.

After installation no further attention is required, lubrication being supplied entirely by the oil or grease in the transmission. Either pump is supplied complete with 15 ft. of air hose with 200 lb. gage installed, brackets, gears and all necessary installation fittings.

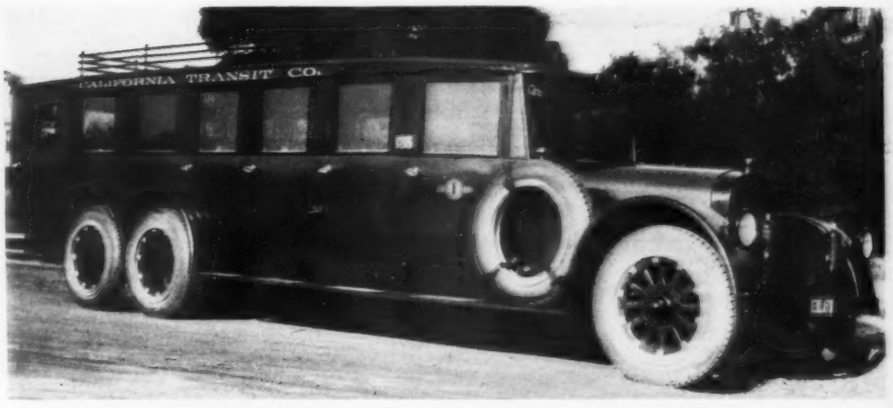
New Prest-O-Lite Bus Battery

The Prest-O-Lite Co., Inc., Indianapolis, Ind., recently introduced its new bus battery in response to a demand for a storage battery that would give longer life and lower cost per mile of operation than the standard type of automobile battery in use today. The necessity for a special battery in this service is convincingly shown by the comparison of 50,000 miles per year covered by buses and taxicabs as against the average mileage of 7000 for passenger cars.

The new Prest-O-Lite battery with its heavy-duty plates and other special engineering features is declared to meet this condition. It will be known as the KPC type and will be made in 7, 9, 11, 13 and 15 plate sizes. Jars of special rubber compound with an increased sediment space of 1¾ in. will be used. These will be inserted in heavy oak boxes equipped with military handles. Plates, positive are 7/32 in. thick, and inside negatives, 11/64 in., and outside negatives, ⅛ in. thick. The separators are of heavy selected Port Orford Cedar. The post is of the heavy screw and nut type using a rubber gasket between the post, shoulder and cover.

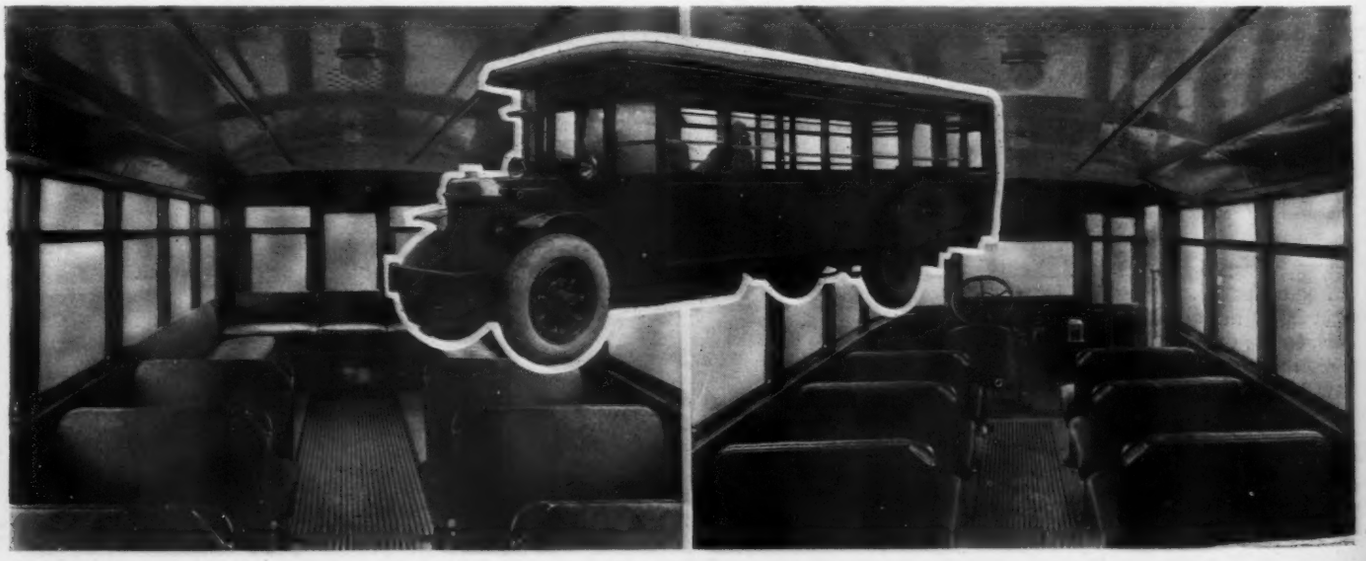
Open Competition for Polish Motor Market

Adverse foreign exchange rates have little effect on the market for American cars in Poland, for there is no domestic manufacture of motor vehicles in that country according to S. J. Dalferes, American vice-consul at Warsaw. The Polish puchaser of a motor car or motor truck must figure his cost from foreign currency.



Six Wheel Stage Developed by California Transit Company

Better braking, no skidding, wider tread, more tire mileage and easier riding are advantages claimed for the stage with a four wheel rear end. The new stage seats 26 passengers and driver. In addition to the novelty of the rear end, this six wheeler has several interesting features, notably the arrangement of springs and bumper on the front ends, the position of the steering post, the roof baggage rack, and the single door entrance serving the rear or smoking compartment.



Detailed Views of the Union Bus Which is Built Practically Complete by the Union Motor Truck Company, Bay City, Mich.

The body and chassis with the exception of the axle, transmission and engine is built entirely by this concern. Many features of construction distinctly individual in this job are noted which make for increased sturdiness and efficiency. No detail has been neglected; engine hangers, mufflers, etc., each having received special attention in the original design. Performance in unusual mileage has already been established in a recent showing of 75,000 miles, which was obtained on the entire set of tires of 38 x 7 pneumatics, front and 42 x 9 pneumatics, rear. This company is also devoting much effort in the designing and production of a bus specially adapted to meet the exacting requirements of interurban service.

Brockway Trackless Trolley Chassis

An interesting feature of the 25-passenger, 185-in. wheelbase Brockway Trackless Trolley chassis, built by the Brockway Motor Truck Co., Cortland, New York, is its construction which makes possible the installation of either a gas or an electric motor with equal facility. The chassis design is such that either method of propulsion can be employed without any mechanical difficulty or without impairing its operating efficiency. A number of these jobs are being used by the New York State Railways, views of one of the jobs is illustrated herewith.

The following is a brief resume of specifications exclusive of the power plant:

The frame consists of side rails of pressed steel, channel section type. Height from ground to top of frame, 27 in.; height of floor from ground, complete car, 28½ in. The rear axle is of the internal gear type with 71-in. tread, and the front axle is of the conventional I-beam section of special drop design, tread 66½ in. The steel disk center Sewell Cushion wheels are equipped with Overman cushion tires, 36 x 6 front and 36 x 6 duals, rear.

Two set of brakes are provided. The service brake, external contracting shoe type, actuates on two 11-in. drums; 5-in. face mounted on the propeller shaft. It is controlled by a foot lever. The emergency brakes act on drums located in the rear wheels and are controlled by hand lever. Steering is through a worm and wheel-type gear, on the column of which is mounted a 22-in. wheel.

The propellor shaft is tubular and is said to be of sufficient strength to slide wheels on a dry pavement. It is equipped with universal joints of the fabric type which require no lubrication. The springs which are of silico manganese steel, heat-treated, are of the compensating type, which is claimed to make for easy riding under all load conditions. The bumpers offer maximum protection in view of their strength. They are of 6 in. channel iron, ¼-in. web, firmly secured to the chassis frame. They are furnished both in the front and rear. The chassis is lubricated throughout by the Alemite high pressure system of lubrication.

These buses when electrically equipped have two GE-264, 25 hp. motors and non-automatic contactor type control. The weight of the electrically equipped buses without load is 12,000 lb.; wheel diam., 36 in.; gear reduction 10.2-1; average voltage 550; schedule speed, 8 m. p. h.

Mogul Engine Bearings

The contributions of the Muzzy-Lyon Company, Detroit, Mich., manufacturer of Mogul bearings, to the bus branch of the automotive field are die cast babbitt and bronze back babbitt lined bearings and bushings for motor bus engines. This company recommends the bronze back babbitt lined bearings for motor buses, as they will stand up under the very severe service they have to meet. They are also stated to be particularly desirable in the servicing of bus engines because the bearings are readily interchangeable.

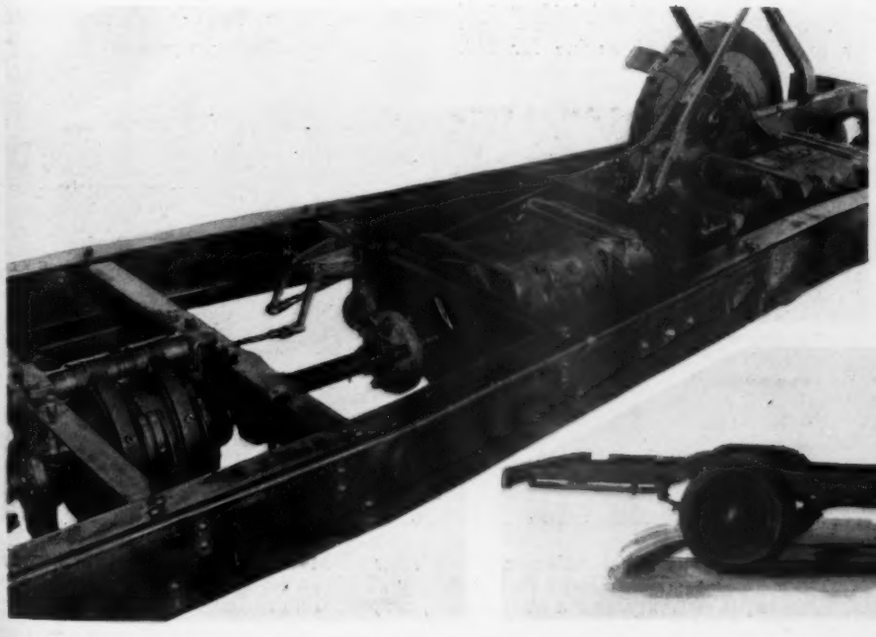
Mogul bearings are produced to very fine limits that can be put into the crankcase or connecting rod without an extra machining.

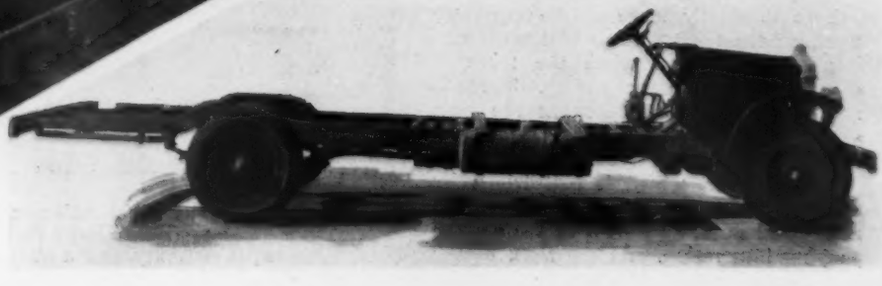
Showing How One Express Company is Prepared to Take Care of Unwieldly Merchandise Such as Piping, Long Bars and Rods

The utility of these hooks is not depreciated by ungainly appearance when not in use as they can be folded or turned back against the body. The Kellogg Express Company, of Oakland, has equipped one of their White express trucks with these hooks to good advantage.

Special Bus Lamp Recommended by the Superior Lamp Company, 313 Halsey St., Newark, N. J.

This lamp is made entirely enclosed and is constructed in such a way that the light illuminates the ceiling as well as every part of the body. It is known as the Model 6-W indirect lighting. Extreme diameter, 6 in.; diam. of glass, 3¼ in.; height, 2 in. The price is $2.50. This concern also offers other types.





Views of the Brockway Trackless Trolley

Left: Showing the motor and brake assembly of the electrical installation. Below: Side view of the gas bus chassis. Note the frame construction and gas tank mounting.

Portable Salesman Sells Service Equipment

Actual Demonstration of Service Equipment Right on the Prospects' Home Grounds Produces Sales Which Otherwise Could Not be Obtained

Knight & Thim Employ a 2-Ton Nash Truck With Special Body to Demonstrate Ford Repair Shop Equipment

The small and remote places are covered and the demonstrations have resulted in satisfactory sales. Sleeping quarters are included in the equipment

DEMONSTRATING heavy service station equipment helps the distributor a great deal in the small towns and remote places. Only a small per cent of the prospects will visit the headquarters of the distributor to see the equipment. Photographs and catalogs shown by the salesmen, do not always convince the owner of the small shop that the equipment will function as claimed. The proprietor of the small town garage or repair shop needs convincing that he should spend real money for equipment and must be shown what the equipment will do.

Knight & Thim, New Haven, Conn., has solved the sales problem in a practical manner. This concern merchandises the K. R. Wilson all-combination engine rebuilding machine, also speed tools and a line of other Ford equipment. Realizing that the smaller towns could not be sold in the conventional manner, Knight & Thim purchased a 2-ton Nash chassis and had a body built to carry and demonstrate the equipment.

Two unusually large doors open outward on the right side so that the opening faces the curb when the truck is driven up to a prospect's shop. There is another large set of doors at the rear, and when both side and rear are open, the interior is well lighted.

The machine, which is belt-driven by a gasoline engine, is mounted near the right-hand door, as shown in the accompanying illustration. At the right of the machine, a work bench with vise, rod and piston aligning device, speed wrenches, etc., are located. Other time and labor-saving tools and devices for Ford work are displayed.

The method of demonstrating and merchandising is as follows: The truck is driven up to the prospect's shop and the side doors opened. The proprietor and his men, if any, are invited to come out and inspect the machine, the features of which are explained. Messrs. Knight & Thim, who travel with the truck, next offer to rebuild a Ford engine for $10, doing a complete job, from reboring, rebabbitting, fitting new bearings, piston rings, etc. This offer is made to prove to the prospect the capabilities of the machine.

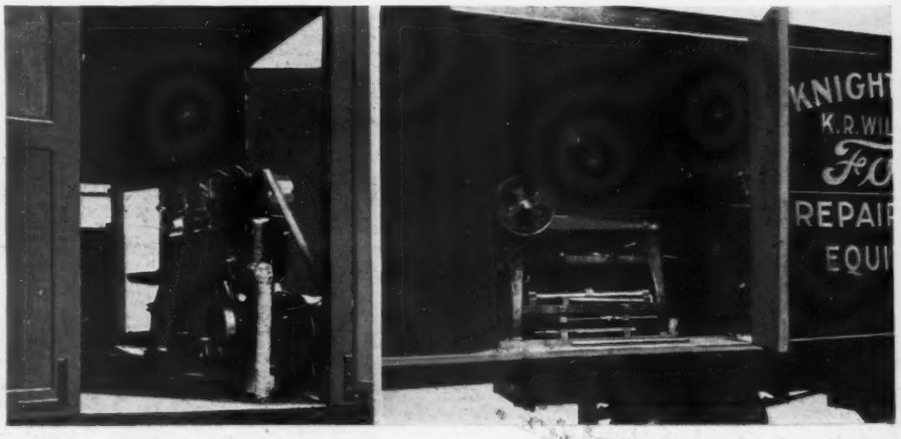
One of the firm states that with both working they have completely rebuilt a Ford engine in three hours. This is due to familiarity with the machine and to practice. The speed with which the work is done impresses the shop owner, who is informed that if he buys a machine the demonstration charge will be credited to him.

The Nash truck has been on the road in Connecticut for about 10 months, and during this time, 176 Ford engines have been rebuilt in demonstrations, or about an average of slightly more than 1.5 per working day. The average number of calls made is about three per day.

In speaking of this method of selling and demonstrating, one of the firm said that they had tried many plans to merchandise the machine but found that the owners of small shops, in isolated places particularly, could not be interested. The truck provided means for making contact with the shops and that it was interesting to note the number of very small shops handling Ford work that had been sold. He quoted a case of a small shop at which he called, but after an inspection did not believe there was a chance to sell the machine. But this one-man shop bought.

"The time in which the work can be done, carries the sales punch that results

(*Continued on page 80*)



Large Side Doors on Right Afford a Good View of Machine Which is Driven by a Gasoline Engine. Rear Doors Admit Plenty of Light. The Interior is Lighted by Electricity, and a Workbench, etc., is Included in the Shop

How to Make Your Stock Room Pay

The Stock Room Should be Easy to Reach by the Public, by Service Employes and by Repair Men; Arranged With First Thought for Conspicuous Display and Convenient Disbursement; Under Simple But Accurate Accounting Control, Showing Perpetual Inventory and Location of All Items

By GUSTAVE H. RADEBAUGH, Formerly Member of the Faculty, College of Engineering, University of Illinois

(Concluded from our August issue)

THE convenience of knowing how much stock is on hand is not only valuable when ordering but is also the best guarantee that your customers will be protected in repair part replacements without unnecessary delays. In using a perpetual inventory plan there are three essentials that are absolutely necessary:

(a) A physical inventory to determine the number of pieces at start.

(b) A record of material or supplies received.

(c) A record of material of supplies delivered.

In this plan it is also advisable to establish maximum and minimum allowance of stock. This eliminates the unnecessary tie-up of capital in stock that will not be used only over a long period. To make it easy for a dealer to take advantage of some of these standard practices of stock control some supply houses have added to their line a complete set of forms that can be purchased in thousand lots. The form is Fig. 11 (see page 67) is of standard design. It is arranged to receive entries of stock ordered, received and delivered. To further explain how this form is used the jobbers description will be of interest.

Desk for the Store Room Clerk

A convenient place should be provided in the store room for making out records and issuing charges. This stimulates a keener appreciation for accurate charges. The shop "want" book can be seen lying on the desk.

The perpetual inventory record card is a buff cardboard (standard size), printed on two sides. It gives a complete record of every stock item, showing date and quantity purchased with order number and routing—date and quantity received with invoice number and total received—date and quantity withdrawn and the requisition number; also the balance on hand. It has a record for 40 receipts and 80 withdrawals, and balances every line. It makes a perpetual inventory for your stock room. The sample form shows that on June 14, 1922, 10 Bevel Gears, No. 48T, were ordered. On July 22 they were received, having come in by freight as ordered on Order No. 146. The Company's invoice number was 5336. On June 28 Requisition No. 143 for one was presented at stock room and it was delivered, leaving 9 on hand. On July 1 another Requisition No. 171 for one was presented and that left 8, and another on July 12 leaving on hand 7. On August 14 there were 3 on hand, so an order, No. 207, was placed for 10 more, to come by freight. Before these came in the stock ran down to 1 on the 17th, and an order, No. 219, was placed for 2, to come by express. These were received on the 19th. So when 1 was withdrawn on the 26th it left 2 on hand. On August 29th the freight shipment of 10 came in, and on September 1, when 1 was withdrawn, it left 11 on hand. Thus at any time a re-

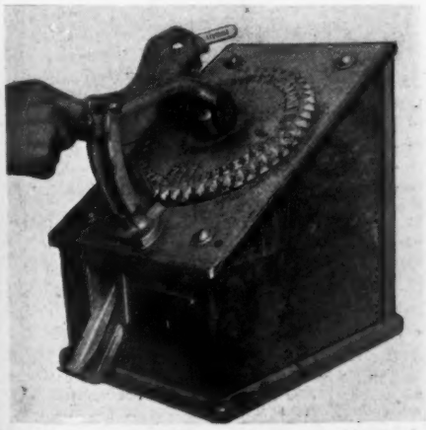


Fig. 13. Making Aluminum Labels for Inventory Tags

Labels stamped on this small aluminum embossing machine will be found useful in the stock room to identify storage bins, to permanently label parts that are in storage and as an inventory number label.

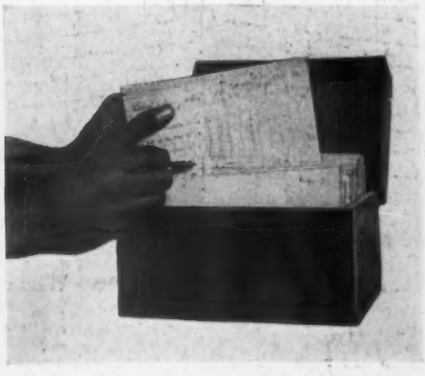


Fig. 12. Making the Daily Entries

The perpetual inventory records should be kept in the main office and not in the store room. A substantial filing box should be provided and all inventory cards properly filed and indexed.

Fig. 14. Aluminum Label Attached

The inventory tag is shown in place which identifies the can and also gives a reference to the inventory file where the cost and place purchased, size and manufacturer's number can be secured. This information is useful when reordering.

cord of the stock and purchases is always shown.

This form should be kept in the main office where the necessary entries can be made. and filed as shown in Fig. 12. Each card should be indexed under repair parts accounts with the divisions as shown in the graphical control chart in Fig. 7 (see August issue). Considerable time can be saved by the clerk if the cards are easily found in the file. Entries on this record should be made each day. Physical inventory is only necessary at the beginning of a record and at intervals found necessary upon an inspection of records.

Identifying Shop Tools and Equipment With Inventory Numbers

To effectively control all the tools and equipment a record is made of each article amounting to a value of more than one dollar. This record is made when the article is received and an identification number is placed on the article. These record cars are filed similar to the stock cards. The information found on records cards are filed similar to the name of article, from whom purchased, cost and date purchased. Some recommend the depreciation rate and yearly valuation entries. The most simple inventory numbering scheme is to have the firm's initials prefixed, the inventory number thus: F. W. 7. 32, the Fig. 7 designating the seventh division of equipment inventoried.

For example the office furniture could be represented by Fig. 7 and the 32 representing the 32nd article in the office inventoried; the shop tools being represented by division number 60. To make a plain substantial inventory number to be placed on large equipment such as desks, chairs, cases in store room, machine tools, etc., an aluminum tag can be stamped on the embossing machine as shown in Fig. 13. This is not a costly machine but the installation would not be justified unless a firm had considerable tagging to do. This method of aluminum tagging is used considerably not only for inventory, but for tagging storage parts and parts returned to factory for repair. Oil does not effect this tag like it does the paper tag so commonly used. How to place the tag on metal equipment may be of interest. I have found the most simple way is to use escutcheon pins. The hole drilled should be a trifle smaller than the pin. The label is fastened in place by driving the escutcheon pins in the holes and bending them over on the inside. The tag is shown in place in Fig. 14. Machine screws are sometimes used but this method requires considerable time and does not make any better appearing job.

Stores and Stock Forms

To properly control stores it is necessary to use several forms. The location of the stock room and the business volume has some influence on what type and how many many forms should be used. The ones shown are suggested to give some idea as to the general arrangement and character. Some may decide that it is not necessary to incorporate all the items of entries found on each form, adjustments can be made to suit individual cases as long as the general principle is used. Four forms are generally needed in the stock room for effective control of stores. Every item that is issued from the stock room is charged on stock requisition, Fig. 15. Nothing is issued unless

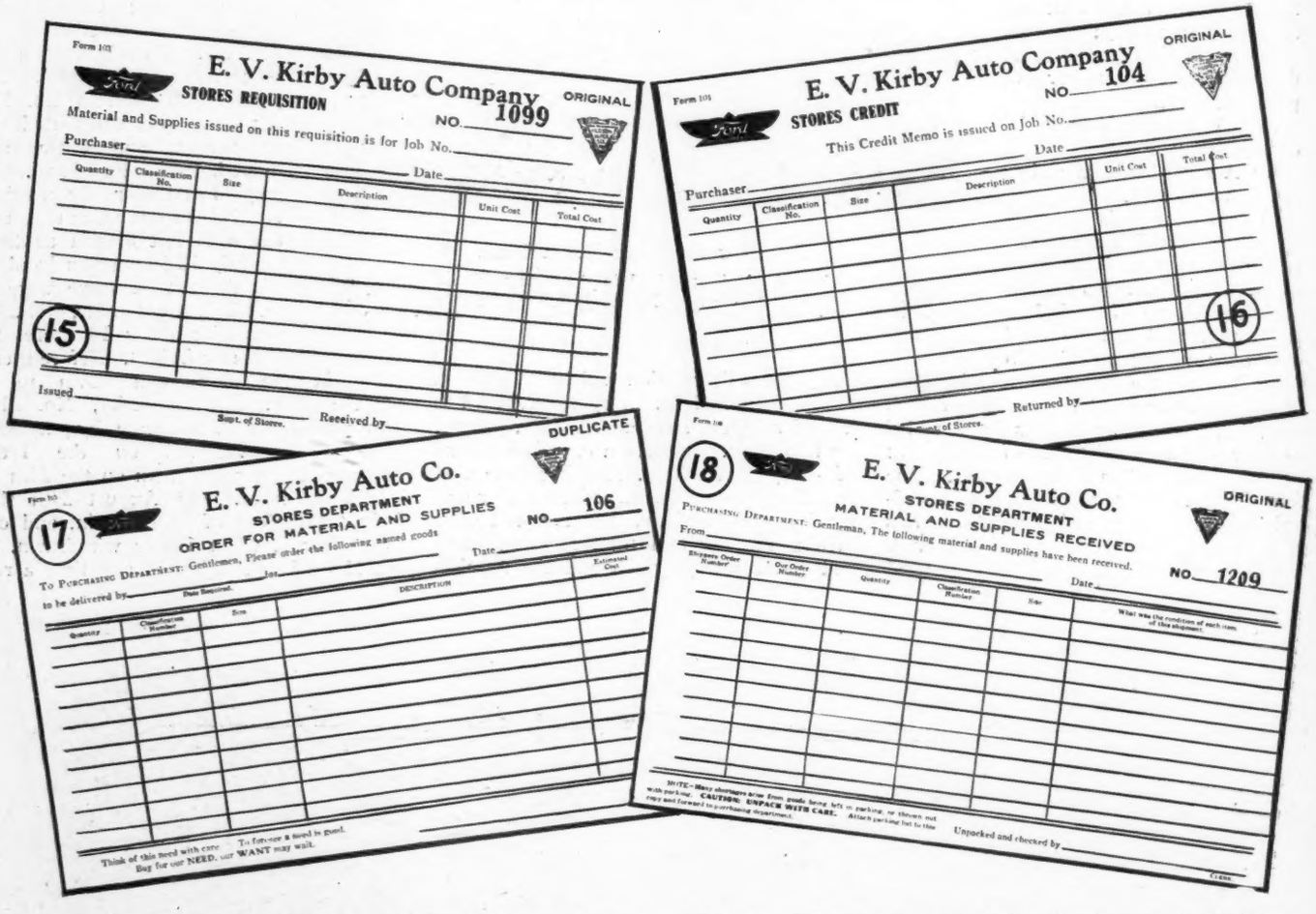


Fig. 19. A Charge is Made on This Form for Stock and Supplies Issued

This requisition is used in duplicate. When material is given out at the store room the charge is made on this requisition. The original is forwarded to the accounting office where charges are made. The perpetual inventory entries are also obtained from this information. The duplicate is filed in the store room.

Fig. 17. Verbal Orders Don't Go. The Stock Clerk Orders All Supplies on This Slip

The store room clerk orders all of the supplies through the office by using this form.

Fig. 16. When Store or Supplies Are Returned, Credit is Given on This Form

The stores credit memorandum is used in duplicate. The stores clerk issues this credit, the original being given to the accounting office. Using a credit memorandum, the customer is sure to get the benefit of more accurate accounting.

Fig. 18. Making It Easy to Check Invoices

When the shipment is received the store room clerk checks the material and makes the entry on this record. It is made out in duplicate, original going to the office to be checked with order and invoices and to make entries on perpetual inventory.

Form 61—STOCK ROOM RECORD CARD

DESCRIPTION OF PART: Bevel Gear - 48T

Minimum: 4 Maximum: 10 Parts No.: 101433 Cost: $12.32½ Sell: $14.50 Sec.: 10. Bin No.: 105

FOR: XV Truck CAR MODEL NUMBER USED IN COMPLETE CAR: 1

On Order				Received				Delivered					Delivered				
Date	Order No.	Routing	Qty.	Date	Invoice No.	Qty.	Total Received	Date	Req. No.	Qty	Total Del'd	Balance O. H.	Date	Req. No.	Qty.	Total Del'd	Balance O. H
1922 8/14	146	Frt.	10	6/22	5536	10	10	6/28	143	1	1	9					
								8/19	381	1	1	2					
11/1	289	Frt.	10	11/17	8446	10	10	8/26	487	1	1	2					
								9/1	488	1	1	11					

Fig. 11. Form Inventory Card for Perpetual Stock Record

A perpetual inventory is not only essential but necessary and should be used to control stock in every dealer's store room. This card exhibits a type of form that can be secured from dealers' supply houses. When maximum and minimum limits are placed on repair parts the only effective way these limits can be controlled is by using a record of perpetual inventory. This record eliminates all guess work as to stock on hand and indicates the proper amounts to order.

proper charge is made. This is the connecting link between the office and the stock room. The original of this charge is sent to the office, invoices are issued to customers from these charges and entries made on the perpetual inventory card already described. In case that some material is returned by the customer or the shop the credit memorandum is used, this form is shown in Fig. 16.

The keynote of the stock room should be one of service to shop men. If a workman needs repair parts from the stock room he calls for the part desired and signs his initial on the store requisition and enters the job number. This is the only entry it is necessary for him to make. The stock room clerk makes all the other necessary entries on the form so an intelligent charge can be made. To eliminate all verbal connection between stock room and office the form shown in Fig. 17 is used. The stock room clerk can see by referring to his carbon copy just what items he has ordered and when. This form is not absolutely necessary in the cycle of control but it will be found very useful. When customers or shop, order through the stock room the order can be made out on this form and a closer follow is made possible.

When purchases are made a much more effective follow-up can be maintained if some standard form is used for the purchase order. It is made up in duplicate or triplicate. If triplicate copies are used the original goes to the vendor, the duplicate filed in the office having pinned to it the form shown in Fig. 17 which was received from the stock room. The triplicate goes to the stock room where the carbon copy of the form Fig. 17 can be pinned to it. The cycle of this order is now complete and is awaiting the arrival of the material.

Another very essential problem in handling stock is the receiving of shipments. Too often improper control of material when received is the cause of inaccurate inventory records. Also considerable difficulties are met in the office when trying to pay off invoices in time to save discounts when no record is made of material received other than by verbal mention. Often the delivery is made and for several days it is not noticed, delaying the approval of the invoice as well as the use of the shipment. Every item of stocks or supplies that is received by the stock clerk, understanding that all incoming materials go through the stock room, a material and supplies received form as shown in Fig. 18, is made out. Gasoline, oil and parts delivery are all entered on this form and turned into the office. The perpetual inventory can then receive the entry of material received and the invoice issued for payment. It is much more convenient for the office to know when shipments are received by the receivers ticket being delivered to the office. This eliminates running out to the shop or store room to make a search for material delivered.

When unpacking goods, shortage often occurs. Many times this is caused by careless unpacking. To impress upon the stock room clerk the importance of careful unpacking and checking of shipment, instructions as shown at the bottom of this form is given. Having these printed instructions on every sheet keeps before the clerk at all times the importance of exercising care when unpacking shipments. This form is made out in duplicate, the original going to the office and the duplicate held in the stock room. These are then attached to the purchase orders.

The stock clerk should be provided with a convenient desk or counter where all entries can be made on forms and his necessary paper work carried on. A combination storage desk as shown in Fig. 19 is the one most commonly used in the stock room. Notice the two books lying on the desk. One of these is a book where all shop needs are listed and the other for automotives accessories needed. These want books play an important part in the ordering of these items. A reference to these want books eliminates danger of forgetting to order something that is needed. Forms used can be stored in the desk which has a hinged top. A shelf can be provided for catalogs and trade papers where they will be in easy reach when working at the desk.

Stock represents cash and the same influence of accurate accounting should surround them both. Proper control should eliminate loss by theft or careless accounting methods. The stock room is one of the most important branches of a business and methods that will help control it effectively are always acceptable.

Refrigerator Truck for Chocolates

Being large producers of chocolate candies, chocolate covered cookies, and chocolate bars of all kinds, the firm of Bishop & Company, found itself confronted with a problem. Some method of delivering these products in perfect condition to their customers in Southern California had to be devised.

A member of the firm conceived an entirely new idea for the delivery of the chocolate products during hot weather. This idea recently materialized into a refrigerator car. The body was built to Bishop & Co. specifications by the Crown-Cariage Company of Los Angeles, and mounted on a one ton White chassis.

The car has a top chamber for the ice. The lower part is divided into two compartments, each with a door. This makes it possible to deliver from one part of the car and keep the other part thoroughly chilled.

The car now makes one trip a week to towns in the San Fernando Valley, those along the foothill boulevards, and all Southern California inland towns, from Santa Ana to San Bernardino. This refrigerator system is a tremendous advantage to dealers in these towns, as chocolate products can be taken from the car in perfect condition and put in the dealer's refrigerator, thus enabling them to handle chocolate products all through the summer.

Distant Dealers Assured Fresh Chocolates

This Small Town SERVICE STATION is Making SERVICE PAY

Not Pretentious But Complete

Good Service Produces Satisfied Customers and the Satisfied Customer is the Shop's Best Advertiser. Modern Machinery Produces Both

By C. P. SHATTUCK

COLEBROOK, N. H., is a small town of about 1,500 population, situated seven miles from the Canadian border. In this town is the Colebrook Garage & Machine Company, of which C. C. Cummings is proprietor. He is the representative for the White truck, and while he has not disposed of any great number, those he has sold and others in the territory are unusually well serviced. In fact, his service station is as well equipped as any in the large cities, and much better than the average truck dealer's in places of 350,000 population.

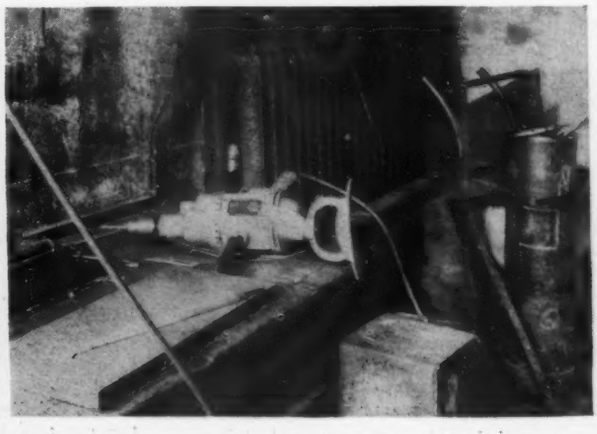
The exterior of the service station is not pretentious. It is a plain one story building without even a sign to indicate what kind of business is conducted within. The average person would pass it by as one of country garages. Even if one were to peer through the main door, this impression would remain. But pass through the second doorway, then another to the right and there's a big difference. Here one will find a completely equipped machine shop, with time and labor-saving service equipment, a metal working department, electrical, washing, greasing, etc. The completeness can be summed up by stating that a chassis could readily be constructed.

The Overhead Crane With Yale & Towne Hoist in Assembly Department

Cuts down time and saves man power in handling heavy units. Overhead tracks communicate with the other departments

The investment represents thousands of dollars, which is unusual in so small a place and it brings up the question why such complete equipment in a territory that experience a short open season? The writer asked this question of Mr. Cummings, who replied in a single word, a familiar one, SERVICE! Mr. Cummings has built his financial success on rendering service that satisfies, which means that high grade, accurate work must be performed at a reasonable price. He purchased the shop and some equipment some four years ago, and at once did two things which spell financial success in service — engaged real mechanics and bought more equipment. The mechanics can operate any machine or device in the station and each man has a big tool kit with fine measuring instruments for precision work.

The list of equipment in this shop reads like a catalog. Special attention has been given to equipment for moving cars about the garage and for towing in disabled machines. Compressed air is piped about the building and a line runs some distance to an adjoining building on



The Metal-Working Department at the Left Includes a Thermoid Brake Lining Machine. At the Right is Shown a Corner of the Metal-Working Department, Which Has Among Other Equipment a Black & Decker ½-In. Drill and Welding Outfit

New Motor Truck Franchise Breaks All Precedents

For the first time in automotive history it is possible to secure a motor truck distributing franchise covering large territory ***without making the customary investment.***

The advertiser is a strong company located in Michigan. The truck is already on the market with national distribution. The company makes a complete line of motor trucks, buses and coaches.

The motor truck business is coming back fast. We are preparing now for this fast coming prosperity. Within the next 60 days we want to be represented in every county by a dealer of *exactly the right type*. Distributors must be of the calibre to present this unusual proposition to dealers.

We want men who know something of motor trucks —who have selling ability—who have the vision to recognize motor trucks as a basic transportation necessity—who are ambitious to own paying businesses of their own.

Limited capital need not keep able men out of a distributorship for this, the greatest automotive proposition that has ever been offered.

We are forming a highly efficient and most complete truck selling organization. Intensive and enthusiastic factory co-operation is being extended. The quality of the truck and the reputation of this company make this distributing franchise an unequaled money-maker.

All present members of our dealer organization know of this advertisement. Regardless of what your present activity may be, you can write in confidence. Please give complete details of your qualifications. Address

DISTRIBUTING OPPORTUNITY,
c/o Commercial Car Journal.

the corner, where Mr. Cummings operates an accessory, supply and equipment department.

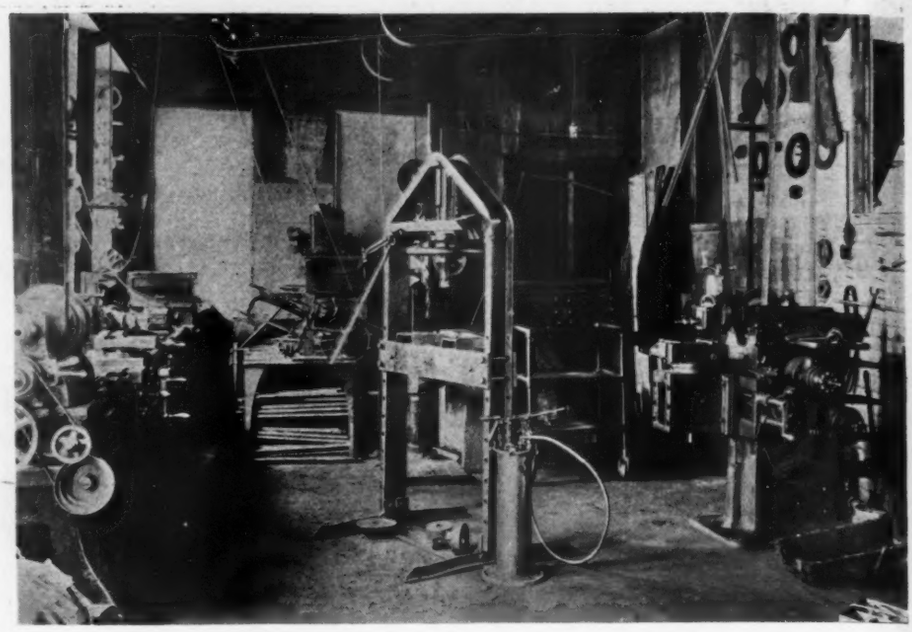
The shop is equipped with overhead tracks so that an engine or other heavy unit can be lifted out of the chassis and run to any department. One of the illustrations show how a form of derrick and Yale & Towne hoist is employed in the assembling room to care for heavy units. With this and the track system one man can handle heavy units with speed and safety.

There are pits in the assembly room, also one in the machine shop. The workbench in the main room extends the entire length and is well lighted. Reamers, taps and dies, etc., are compactly arranged in cabinets. The layout of the departments and location of machines and equipment is such that time is conserved. Fireproof doors are used between departments.

Mr. Cummings does not employ the flat rate except on relining brakes and a few standard operations, but does estimate cost in advance on all other jobs. He states that this system has worked out very satisfactorily.

Much material for machine work is stocked and it is possible with these machines to make the average part if same is not available. It should be borne in mind that it is the tendency of owners in this territory to favor a repair rather than a new part which explains the reason for the machine equipment.

In addition to servicing trucks, tractors and gasoline engines, Mr. Cummings has a service arrangement with the Buick dealer, whereby he stocks the parts and renders service. At the time of writing, there are about 200 Buicks in this territory.

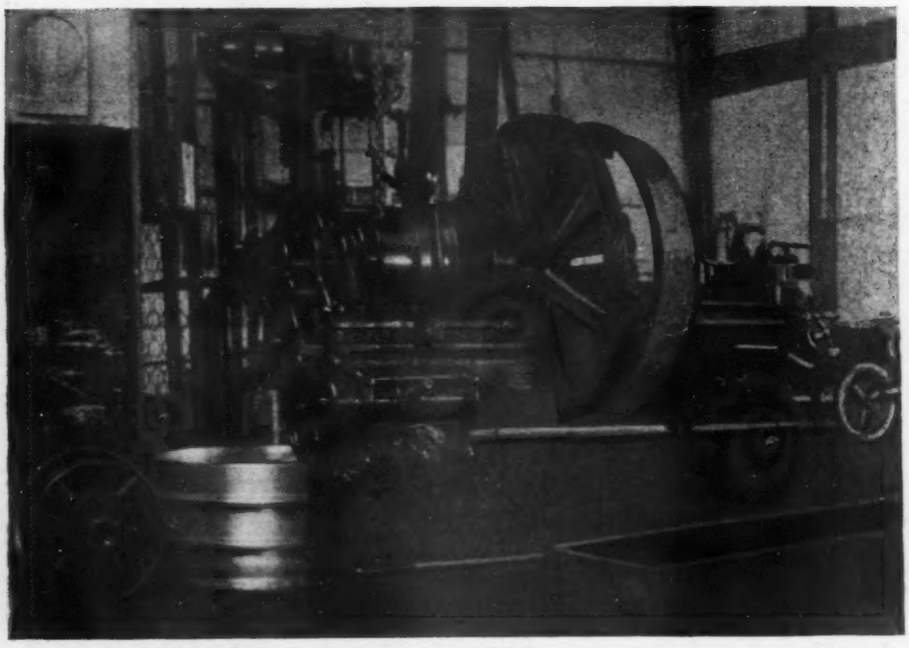


A Section of the Machine Shop Showing Arbor Press, Alemite Lubricator, Etc.

Service Builds Good Will

The writer questioned Mr. Cummings as to his investment and his returns on same. Mr. Cummings stated that the service builds good will for the truck and car and that satisfied owners advertise his service. This results in increased business. Furthermore he stated that service could not be rendered without complete shop equipment and that he made a satisfactory profit on his invesment. New equipment will be added as it is developed.

The case of this service station is interesting because it refutes the statement often made that a service station cannot make a profit and satisfy the customers. It also proves quite conclusively that without the right tools and equipment and good mechanics, service cannot be merchandised at a profit. If a small town like Colebrook can support a real service station, are not the possibilities from a profit and sales standpoint much greater where there are 100 cars and trucks to one in Mr. Cummings' territory?



Special Lathe for the Exclusive Purpose of Turning Out Steel-Flanged Wheels

This machine was recently installed in the branch plant of the White Company, San Francisco, to accommodate the needs of this section, where a number of vehicles operate over steel rails. Some of the finished wheels may be noted at the left of the picture

G M T Company Makes District Sales Appointments

Three new district sales managers and several branch managers have been appointed by the General Motors Truck Co., of Pontiac, Mich., according to V. H. Day, genreal manager.

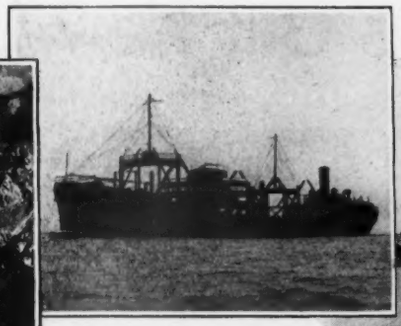
R. A. Sweet, who has been manager of the Indianapolis branch of the truck company for the last few years, has been named district sales manager of the Northwest teritory. He will assume his new duties at once. Mr. Sweet will be succeeded in Indianapolis by J. Z. Perrin, who has been assistant manager. Mr. Perrin was formerly with the factory.

J. W. David, manager of the St. Louis branch, has been named district sales manager of the southern territory. George M. Howard, of Phila., has been named branch manager, to succeed Mr. David.

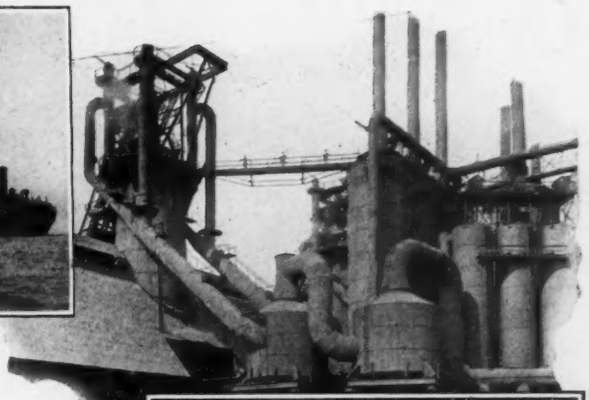
E. J. Kilborn, manager of the Chicago branch, has also been appointed district sales manager for the middle western states and will continue as manager of the Chicago branch. Allen Granger, who has been with the Chicago branch for the last two years, has been named assistant manager of the branch.

The BETHLEHEM WHEEL
is the product of a complete steel-producing organization

Mining the ore to be used in making Bethlehem steel



S. S. Steelore, one of vessels carrying ore

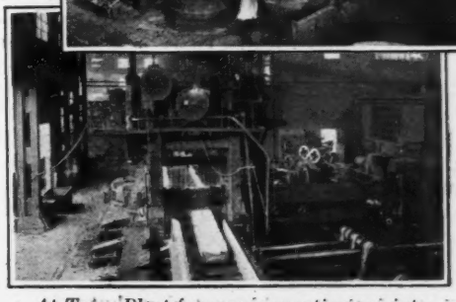


THE advantages of the Bethlehem Wheel are mainly due to the method by which it is built from a rolled steel I-Beam.

But to gain to the highest degree the advantages inherent in this method of construction an ample supply of the right grade of steel must be available.

The Bethlehem Wheel is built by an organization having complete facilities for steel-making. These facilities include more than blast furnaces, open hearths, rolling mills. They extend to coal and ore mines. They include even the big vessels that transport the ore from the distant quarters of the globe, where it is mined.

Every resource of the Bethlehem organization is on call to help keep the Bethlehem Wheel at a standard that insures its worthiness to serve on the finest trucks.

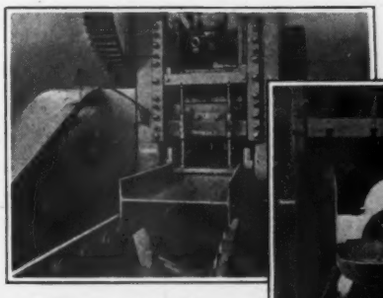


At Top: Blast furnace, converting ore into iron. Beneath: Open hearths, where the iron is converted into steel. At Bottom: Blooming mill, rolling a steel ingot

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

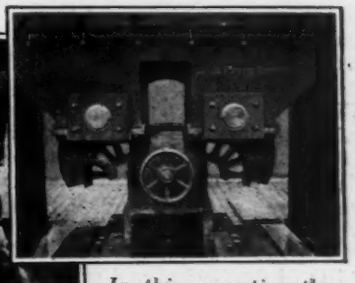
Sales Offices:

Boston	Washington	Pittsburgh
New York	Atlanta	Buffalo
Philadelphia	St. Louis	Cleveland
Baltimore	Chicago	Cincinnati
Detroit	San Francisco	



I-Beam at first step in process that transforms it into a truck wheel

The spokes are formed and the ends of the beam bent through 90 degrees



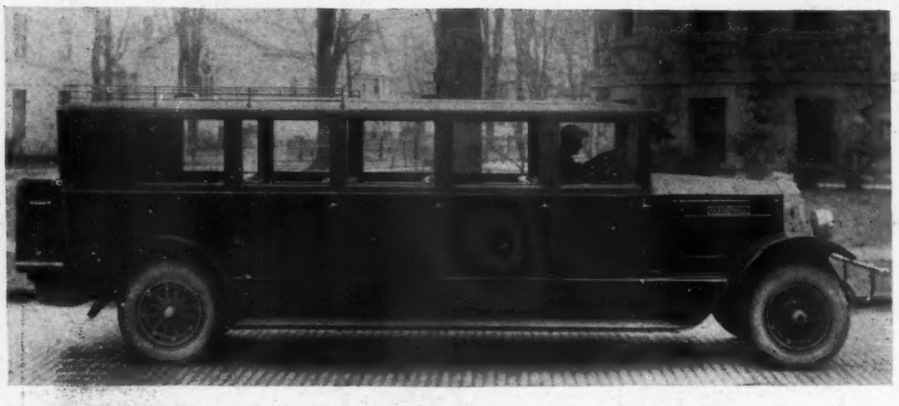
In this operation the complete wheel structure is formed

BETHLEHEM
ROLLED STEEL TRUCK WHEELS

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

NEW COMMERCIAL CARS

Clydesdale Brings Out New Coach Chassis



Side View of the New Comfortable Clydesdale DeLuxe Coach

THE highway coach lately introduced by the Clydesdale Motor Truck Co., Clyde, Ohio, aside from its features of mechanical construction and assembly, presents an appearance of sumptuous comfort, which compels immediate attention. The long and smooth body lines, together with the effect of the limousine-enclosure well paneled with plate glass, promises the prospective rider a passage of solid comfort.

Entrance is gained to the interior through four doors on the right and two on the left. Entrance and exit is easy. A clean sweep of running board not only enhances the general pleasing effect of the coach's exterior, but affords ready ingress and egress through any of its doors. The low designed floor eliminates the inconvenience and danger of high entrance steps. An attractive baggage rack skirts the rear end of the roof and a trunk rack with trunk is effectively poised over the gasoline tank at the rear. Being mounted directly on the frame which projects out at this point the trunk is solidly lodged. The distinctive Clydesdale radiator, hood and bumper design add considerably to the attention arresting characteristics of this job.

This coach will amply accomodate from 15 to 25 passengers and provide sufficient room for the comfort of the driver who drives from the left with all controls at the center. Spark is controlled by hand. A road speed of 35 m. p. h. is attainable. Particularly noteworthy as one of the main mechanical features of this chassis is the provision of brakes on all four wheels.

Driving power is furnished by a 6-cylinder Continental engine suspended from three points. It has an N.A.C.C. rating of 33.75 hp. and a brake horsepower of 36 at 1000 r. p. m. and 70 at 2200 r. p. m. The connecting rods are of I-beam construction, drop forged and with a bearing 2⅜ in. diam. by 1⅞ in. long. The crankshaft is also drop-forged and heat-treated, and rotates on four main bearings. Full force system of lubrication is employed. The cooling system comprises a centrifugal pump and an aluminum cast tank radiator with straight copper tubes protected by guard bars and suspended on springs. Gasoline is fed through a 1½-in. carburetor by vacuum from a 38 gal. tank located at the rear. Ignition is by Bosch.

From the engine power is transmitted through a multiple-disk, dry-plate clutch to a four speed transmission. Timken bearings are used throughout in this gearset. The gear ratios are as follows: 1st, 3.29:1; 2nd, 1.61:1; 3rd, 1:1; 4th, .78:1; and reverse, 3.94:1. From the transmission power is further carried through a tubular propellor shaft equipped with three metal universal joints to a worm drive rear axle providing a final reduction of 7 1/5 to 1. The front axle is of the conventional I-beam construction, drop forged, heat treated and equipped with roller bearings.

The pressed-steel, heat-treated frame 8 in. deep with 3-in. flange and with drop-forged arch over the rear axle is mounted on four semi-elliptic chrome vanadium steel springs. They are bronze bushed throughout. The front springs are 44 x 3 in. and the rear, 60 x 3 in. The steering gear is of the worm and nut type with a 20-in. wheel mounted on its column. Pneumatic cord tires are used throughout, 32 x 6's. Duals are supplied as extra.

The overall length of the chassis is 271 in.; chassis height from ground to top of frame, 28½ in., tread front and rear, 56 in. and wheelbase, 198 in. Standard equipment includes speedometer, tools, jack, electric head and tail lamps, horn and power tire pump. Fenders are not included.

Five carloads of motor trucks formed the initial shipment from the new plant of the International Harvester Co., at Fort Wayne, Ind. The truck production is taking place in spite of the fact that the new plant, reputed to be the largest of its kind in the world, is not yet completed.

Front and Rear View of the New Clydesdale Coach

The Highest Degree of Safety with Easy Steering

With thousands of tourists every day using the motor buses that travel the streets of Los Angeles and the highways of Southern California, the problem of safety becomes a vital consideration. The Moreland Motor Truck Company has realized that one of the surest ways of providing the highest degree of safety for their passengers and for pedestrians is to use a steering gear that gives the driver the easiest and most complete control of the bus. It is only logical that they should use a Ross Steering Gear in the Moreland Safety Coach.

In this new Ross Cam and Lever Steering Gear, we offer simple construction and small size, combined with a maximum of power, reliability, safety and service. The long lever arm inside the gear develops such enormous power that steering is surprisingly easy under all conditions. The variable pitch of the cam at either extreme produces a unique accelerated action in turning which facilitates quick and easy control.

Easy control makes for the highest degree of safety in motor bus service.

Manufacturers who seek and appreciate this superior steering service, should investigate this new gear. We will be pleased to give full information on request.

ROSS GEAR & TOOL COMPANY
760 Heath St., Lafayette, Indiana, U.S.A.

Steering Gears
for
Passenger Cars
Motor Buses
Motor Trucks
Fire Trucks
and
Tractors

ROSS STEERING GEARS

POWER~SAFETY~RELIABILITY — and EASY STEERING

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

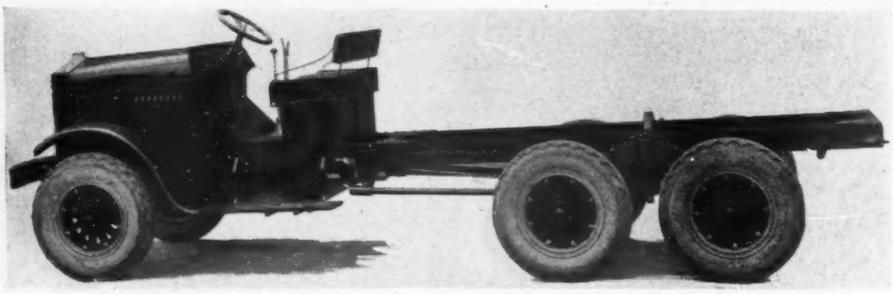
Wisconsin Super Traction Six-Wheel Truck

THE Wisconsin Truck Co., Inc., Madison, Wisconsin, in offering its six wheel super traction truck to the market is offering a truck that by virtue of its six wheels is claimed to reduce tire and upkeep costs fifty per cent. This truck is the only one of its kind on the market today permitting heavy tonnage to be hauled with this tire saving. Not only are the same sized tires used on all four wheels, but tires of a size considerably smaller than required for a four wheel truck of the same capacity. This alone exacts a saving in initial tire cost.

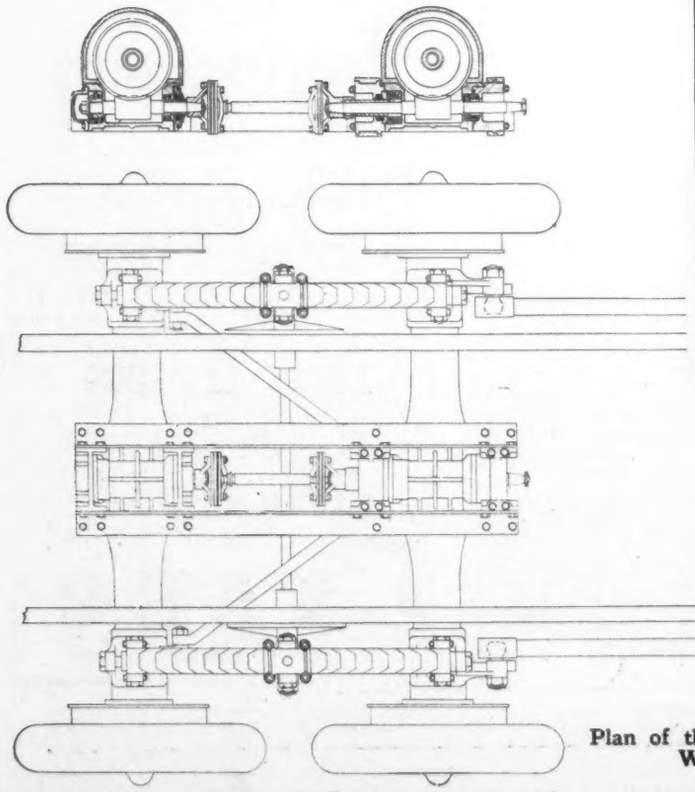
Besides, greater resiliency is afforded trucks up to seven tons capacity since pneumatic tires may be used for all in the still higher capacities of 10 and 12 tons are entirely supplanted by singles. All this is made possible because the load burden and drive on all four of the rear drive wheels reduces by one half the load on the tires. The Super Truck also overcomes the obstacle placed in the path of many industries by certain State legislation now extant in many states restricting the weight of load per inch of tire tread.

Aside from the tire saving features of this truck, the four-driving wheel construction possess other meritorious features. Summarily: Four point spring suspension. Equal distribution of load over all four wheels. Full driving power of engine applied to all four wheels regardless of position. Driving unit held in perfect alignment at all times. Torque is stated to remain in the drive unit and not transmitted to the springs. Two sets of radius rods take the entire driving thrust. Drive connection from the engine is through an 8-in. slip universal joint. Two sets of equalized brake equipment are used.

The entire truck is assembled from units well known to the trade by their name and reputation. They include Continental engine, Stromberg or Zenith carburetor, Pharo Hydraulic governor. Bosch electrical equipment, Brown-Lipe Clutch and transmission, Blood Bros. universal joints, Timken or Wisconsin worm drive rear axle and Bimel wheels. Pressure lubrication, internal expansion brakes, and 6-in. channel steel frame also characterize this job.



New Six-Wheel Super Traction Chassis Offered by the Wisconsin Truck Co.



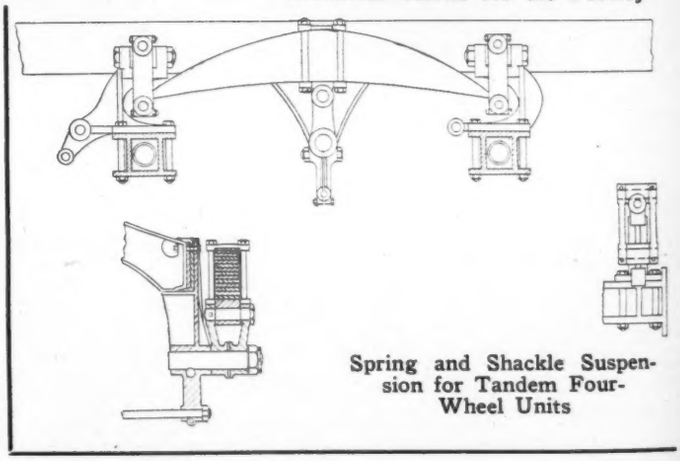
Plan of the Wisconsin Four Wheel Units

New Electric Fork Lift Truck

To go into a warehouse, freight car, pier shed or out into a factory or mill yard and fetch a 2500 pound piece of machinery, or case is no small job.

The demand for an electric truck that would enable one man to do this very thing has recently been added to the Elwell-Parker Lift and Carry Series.

Electrical Carrier for the Factory

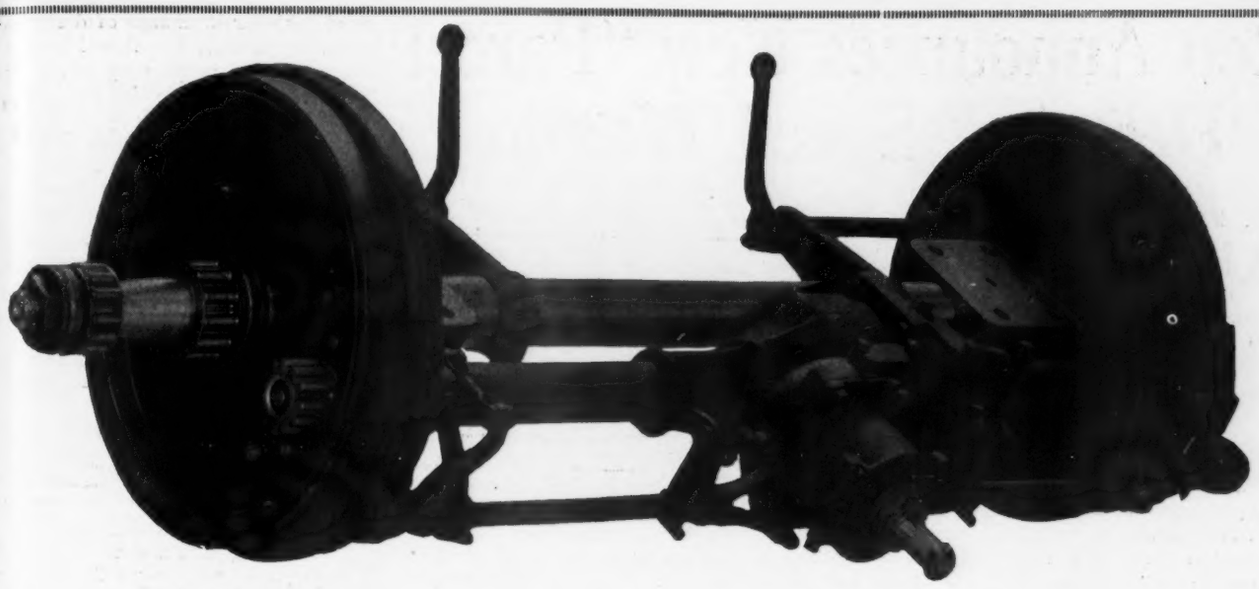


Spring and Shackle Suspension for Tandem Four-Wheel Units

It consists essentially of an electric truck with provision for carrying the load beyond the front axle.

The platform or fork which supports the load is such that its lower side will touch the floor if necessary or it can be stopped at any height between upper or lower limits.

The raising mechanism consists of a separate motor with worm gear reduction attached to a movable platen supported on the truck frame by means of three rocking links. This electric lift mechanism is simple in construction and assembled as a unit.



AUTHORIZED PARTS
THE Russel
MASTER OF ROAD AND LOAD
AXLES

Russel Axles Should be Under Your Trucks

For Efficiency. The same high mechanical efficiency under any condition of speed, load and road—because only gears of rolling contact are used.

For Strength. The chrome nickel load axle carries all the load; and it is shaped so the sections are proportioned to the strains. The special bevels, too, give extra strength at a point that is often troublesome.

For Service. Russel nation-wide service gives dealers an adequate stock of parts nearby to draw on.

Let us send you full data on Russel Axles adapted to your requirements.

Russel Motor Axle Company

Division of McCord Mfg. Co., Inc.

DETROIT MICHIGAN

Coast to Coast Service

Supplementing the truck makers' facilities, Russel parts stocks are maintained at the following points:

Motive Parts Corp., 796 Tenth Ave., New York, N. Y.
W. B. Bearing Co., 452 N. Broad St., Newark, N. J.
Swain-Hickman Co., 2116 Market St., Phila., Pa.
Swain-Hickman Co., Harrisburg, Pa.
Motive Parts Co. of Pa., 237 N. Sheridan Ave. Pittsburgh, Pa.
E. A. Jenkins, Columbia, S. C.
Sanders Truck Co., 12th and McGavock Sts., Nashville, Tennessee
Motive Parts Co. of America, 1907 E. 13th St., Cleveland, Ohio
Motive Parts Co. of America, 116 E. Spring St., Columbus, Ohio
Harry P. Anderson Co., 5948 Second Blvd., Detroit, Michigan
T. H. Baker Truck Service & Storage, 906 Chippewa St., Flint, Mich.
Northern Automotive Supply Co., 5th and Saginaw Sts., Bay City, Mich.
Automotive Supply Co. 219 Tuscola St., Saginaw, Michigan
Automotive Parts & Service Co., 317 Kalamazoo St., Lansing, Mich.
Wilbur E. Smith, 737 Bond Ave., Grand Rapids, Michigan
Motive Parts Co. of America, 506 N. Delaware St., Indianapolis, Ind.
Motive Parts Co. of America, 2311-15 Indiana Ave., Chicago, Ill.
Motive Parts Co. of America, 1204 W. Grand Ave., Des Moines, Iowa
Buda Engine Service Co., 3923 Washington Ave., St. Louis, Mo.
Auto Parts Supply Co., 1819 Grand Ave., Kansas City, Mo.
Gaines Motor Sales Co., Wichita Falls, Texas
Buda Engine Parts Co., 1055 Broadway, Denver, Colo.
Lambert Garage Sales Co., 357 Van Ness Ave., San Francisco, Calif.
Lambert Garage Sales Co., 1416 S. Los Angeles St., Los Angeles, Calif.
Garden City Sales and Service Co., 135 Market St., San Jose, Calif.
Bearing Supply Co., 223 D St., Marysville, Calif.
Coast Motor Parts Co., 1265 Fourth St., San Diego, California
Oregon Parts Company, Sixth and Flanders, Portland, Oregon
Hayes-Anderson Co., Vancouver, B. C.
Motor Service Corp., Monte 483, Havana, Cuba

Russel
MASTER OF ROAD AND LOAD
TRUCK AXLES

Reo Announces New "Parcel Delivery" Speed Wagon

AN interesting announcement in the automotive trade is that of the Reo Motor Car Company. A new commercial model, the Speed Wagon "Parcel Delivery," is the company's latest development.

This speed wagon model is new only in size. It includes the same power and operating units characteristic of the Speed Wagons.

It differs from the Speed Wagon in that it has a shorter wheel-base with correspondingly decreased turning radius, and a body designed for appearances and efficiency in the work which it will be called upon to perform. The wheelbase will be 113 in. and the car will have a turning radius of 20 ft.

The chassis is similar to that so popular in taxicab service during the past year. On this chassis is mounted a body in which full panels or screened sides are interchangeable. The panels are of laminated wood treated in such a way that warping cannot occur. Screened sides are made of a heavy wire so constructed that they will not rattle.

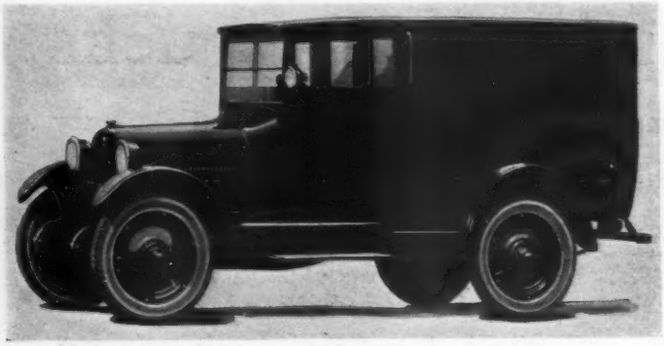
Lower panels are of 20 gage steel, formed from a single piece which runs the entire length of the body. Doors to the driver's compartment reach to the top of the cowl and are covered on the inside to about half of their height with steel panels which form convenient pockets for carrying letters and small parcels. The inside length of the body from the rear of the driver's seat is 71 in., and the width at the narrowest point is 44⅛ in.

The driver's seat is of the bucket type amply proportioned. Beside this seat is one of the hinged type provided for an assistant or a passenger, and arranged so that it can be folded under the cowl when extra room is desired. This feature makes it possible to carry a package 8 ft. long and 30 in. wide with ease. Folding down the extra seat also facilitates moving from the driver's seat to the interior of the body.

In the body an electric dome light is installed to make it possible for the operator to read addresses on packages. The top is of slatted construction with a water-proofed, sound-absorbing fabric for covering. Drip mouldings are provided to carry away water in case of rain.

Side handles are placed in such a position that they aid the driver in getting in and out of the car quickly and at the same time add to the appearance of the vehicle. The standard taxicab windshield is used, and on this is mounted a high-powered spotlight for use in reading house numbers and street signs at night.

Carefully designed side curtains which open with the doors complete the compactness of the car for driving in wet or wintry weather. A spring steel bumper at the rear of the chassis provides protection for the body, tail light, and license plate and is also utilized by means of a plate in the center, as a step for entering the body from the rear.



Reo Brings Out a New Speed Wagon Model, the Parcel Delivery.

A heavy sheet metal tool box fitted with lock and key is placed on the left running board and on the left side of the body above the tool box are placed three supports which carry an extra tire and provide for its being locked. The wheels are Tuarc Discs, fitted with 33 x 4½ cord tires.

Royal Motor Coach Company, Inc., Commences Production

A group of prominent New Jersey men have just organized the Royal Motor Coach Co., Inc., with $500,000 of preferred stock and $500,000 common stock. The men behind this company are well known in New Jersey motor bus transportation activities and automotive circles. They are G. Easman Jacobus, President of the Butler-Newark Bus Lines, Inc., Boonton-Mt. Lakes Motor Bus Line, Inc. and The Trackless Transit Co., Inc.; Ralph De Camp, President of the DeCamp Bus Lines of Livingston, Morristown and Newark, N. J.; David Peters, President of the Elizabeth-Rahway Bus Line; Mark A. Smith, formerly sales and advertising manager for the Ace Motor Coach and F. G. Alborn former designing engineer of the Locomobile and more recently the chief engineer in charge of designing and manufacturing of the Ace Motor Coach. All are either veteran operators or have had long experience in the automobile industries.

F. G. Alborn, former designing engineer of the Locomobile, designed the bus, which is of the low-center-of-gravity-safety type. It is claimed to possess unusual riding qualities. The passengers are loaded directly into the vehicle on a large platform, just a little lower than the floor. High steps are eliminated. Progressive type of springs are used throughout and the body is mounted on a special design of frame that supports it the full length and width.

The chassis is really a large passenger car chassis with a frame only 23 inches above the street at the entrance when 36 x 6-in. tires are used. The engine is a Model 400 Midwest, governed to 1500 r. p. m. which gives a road speed of 35 m. p. h. A special Brown-Lipe bus transmission and clutch is employed. The rear axle is a Timken underslung worm drive with 69 in. tread, for dual wheels and the same make of front axle with 68-in. tread Model H Ross steering gear and Peters universals and drive shaft is used.

The body as well as the chassis is built by this company. On the Model A, 29 passenger suburban type motor coach a 21 ft. 3 in. body having head clearance of 6 ft. 4 in. standard. Haskelite Plymetl is used exclusively for panels. Raise windows with metal sashes is another feature. The seats are leather finished, full interburban width, placed 30 in. to centers and the interior finishing of the vehicle is of the highest grade. Eight ceiling lights give illumination and by use of a special generating outfit and dual batteries every precaution has been taken to make the system dependable.

In about a month quantity production on the Royal Motor Coach will be under way. There is reported to be no lack of orders. The shut down of all trolleys operated by the Public Service Corp. in New Jersey gave the motor bus a chance to show it's ability to handle transportation. Many new operating permits have been granted and a real shortage of motor buses has been created. There are plenty of the truck type vehicles available but the public demand more modern equipment so that the production on Royal Motor Coaches will be rapidly absorbed in a territory that is entirely favorable to motor buses.

Closed Cab for Oldsmobile Trucks

The Lansing Commercial Body Company is manufacturing a closed cab for Oldsmobile Economy Trucks. This cab is built to use the standard windshield and has ventilating back glass and door windows. The price is low and if desired the cab can be mounted, painted and trimmed, on the truck chassis in this city so shipment can be made with other models. A card to the Lansing Commercial Body Company, Lansing, will bring complete information and prices.

Acme Profits Helped the Motor Square Garage *Through* 1921

The substantial, stable, dependable franchise that keeps the ship afloat in troubled times is the big seller during prosperous days.

The Motor Square Garage, Inc., Uniontown, Pa., proceeds to prove it by the statement in their letter about the Acme franchise:

"Were it not for the profits of the Acme franchise, we could not have stood the strain of business conditions of 1921. Right now the profits of our Acme business are such that we feel that 1923 will be a banner year."

This is only one of many dealers who are similarly grateful for the Acme franchise. Write now and ask us if your territory is open—you can't start too soon making Acme profits!

The line includes ten models—from a speed truck to one of 12,500 pounds load capacity. Bodies are Acme-built. We'll send you all the details about our unusual franchise on request.

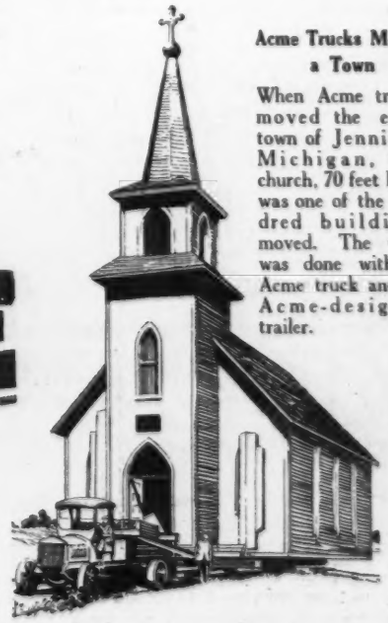
Trade-Mark registered
U. S. and other countries

ACME
THE TRUCK OF PROVED UNITS

On the radiator of every Acme is this Seal of Dependable Performance

ACME

ACME MOTOR TRUCK COMPANY
535 MITCHELL STREET
CADILLAC, MICHIGAN



Acme Trucks Moved a Town

When Acme trucks moved the entire town of Jennings, Michigan, this church, 70 feet high, was one of the hundred buildings moved. The work was done with an Acme truck and an Acme-designed trailer.

All-Weather Durabilt Steel Cab

Durabilt Steel Cabs made by the Sheet Steel Products Co., Chicago, Ill., not only provide for the comfort of the driver in every respect and in every season, winter or summer, storm or shine, but are also characterized by constructional features that make for appearance, longevity and comfort both in the elimination of rattling noises and the absorbtion of road shock and vibration.

A feature in design is the mounting of the cab on three points, two brackets in front and a special flexible joint in the rear. This suspensional construction is claimed to eliminate the weave which later is followed by distortion, looseness and rattle. The under-structure is patterned after the modern skyscraper. This construction enables all the stresses to be taken up in a skeleton framework of light but strong structural angle, all members of which are securely fastened together. The sheet steel covering is then wrapped around the angle, pressed down in a die and further secured by rivets.

The doors, which are made in two sections, are of the swinging type and work easily and quietly. The upper half or section can be adjusted to suit the convenience of the driver or weather. When raised the upper half is concealed in a rattle roof rack under the roof from which it can be readily withdrawn if there be need and dropped into specially designed hinges and with a turn of a thumb nut, locked to the lower halves. These doors are of special design and an self-adjusting for rattle and wear.

Blind spaces in the cab have been reduced to minimum. The windshield and windows are of sufficient depth to permit a wide range of vision to the driver at all times. Use of narrow steel posts offer but little visionary obstruction. The heavy sheet glass of the windows are held firmly in place by metal frames acting against rubber channels and held in place by extra large SAE cap screws. The rear window slides in steel channels and is protected by a die-made steel frame rubber insulated and made rattle proof by felt strips.

Full View of the Durabilt Steel Cab

Note the narrow posts, adjustable windshield and the two section doors

The windshield is constructed of narrow but strong steel moulding. The glass is secured in a water-proof and rattle-proof fashion. Both sections can be moved either in or out.

Driver riding comfort is assured by deep well-made cushions. Spring construction is employed in both seat and back. Imitation leather is used as a covering. The seat cushions are in two sections for convenience in getting at the gas tank, battery tools.

Metro All-Steel Open Cab

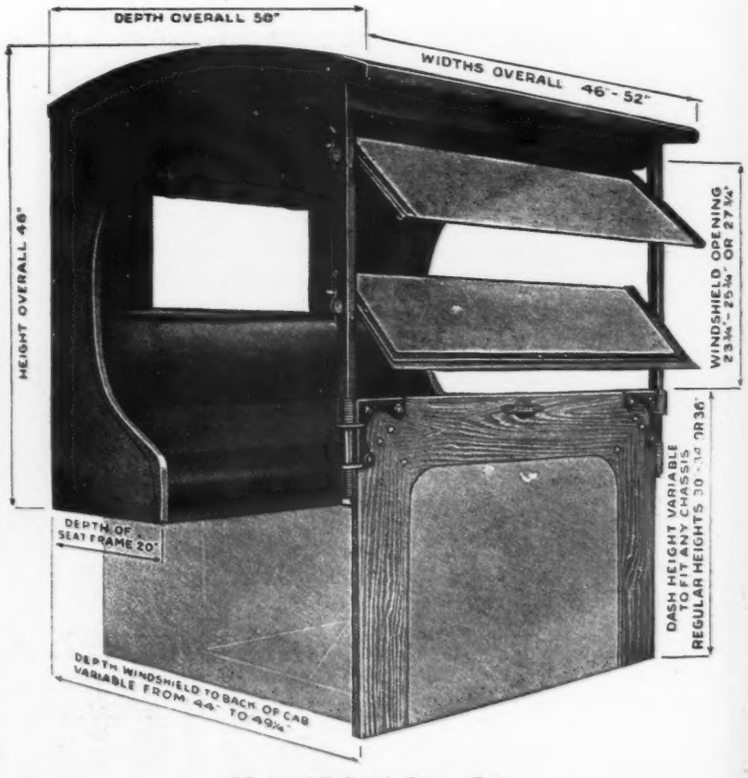
The Metropolitan Body Co., Inc., Bridgeport, Conn., recently announced a new cab that is unique in its advanced open cab construction. Since cabs are subject to an abundance of rack and wear through vibration, side sway and strain special attention was given these conditions of cab life in the designing of the Metro cab. With this important perspective laid out before them the engineers were guided in the construction of a cab that is now claimed as being fully capable of compensating and absorbing all side sway and strains. Another feature of the cab is it cushioned windshield. The windshield is sturdy in construction and is supported by slender posts, which in no way obstruct the vision. The glass is mounted in extra heavy tubing inset with pure rubber. Substantial and positive acting fixtures, hangers and brackets made up the windshield equipment.

This all-steel cab with its cushioned windshield is made in two sizes or widths, 46 and 52 in. The seat, frame, roof back and sides are individual units, each capable of repair or replacement. The framework is entirely of angle iron structure, riveted and reinforced. One of the main factors making for the resilience of this cab lies in the use of blue annealed steel. At the edges, where the wearing action of strain makes it first appearance, the possibility of wear was anticipated by triple-lapping the edges. This construction gives a total of four thicknesses of metal at these points.

The cushions and lazyback are durably constructed. Their hardwood, lap-jointed frames are upholstered in quality weatherproof imitation leather. Curtains of the same material are provided in both the front and rear.

Walker Electric Used in a Novel Electrical Appliance Selling Campaign

A mammoth electric fan 48 inches in diameter together with many similar useful electrical products is being used by the Commonwealth Edison Company and the Westinghouse Electric & Mfg. Company to boost the sale of household appliances in Chicago. Mounted on a Walker Electric truck and carried through the residential sections of the city, the display has been attracting a great deal of attention and has been making many sales. The main portion of the truck platform is filled with enough Edison storage batteries to supply 220 volts, which is sufficient to operate the appliances.


DEPTH OVERALL 58"
WIDTHS OVERALL 46"-52"
HEIGHT OVERALL 46"
WINDSHIELD OPENING 23¾"-25¾" OR 27¾"
DEPTH OF SEAT FRAME 20"
DEPTH WINDSHIELD TO BACK OF CAB VARIABLE FROM 44" TO 49¾"
DASH HEIGHT VARIABLE TO FIT ANY CHASSIS REGULAR HEIGHTS 30" TO 36"

Metro All-Steel Open Cab

Signal realizes the necessity of the close and harmonious co-operation necessary between dealer and factory if both are to make money.

Years of experience in the distribution and retail selling of trucks as well as in their manufacture is embodied in the Signal Sales Franchise.

It contains no catch phrases—nor do Signal endeavor to print a picture for Signal dealers that cannot be easily realized by any good business man.

A good truck—built of the best known standard units—well established old company with unexcelled reputation—a thorough understanding of the dealers' problems and co-operation built on this understanding all go to make the Signal franchise attractive to the experienced dealer who is looking for a profitable and pleasant connection.

Signal needs more good business men representing them in territories now open.

SIGNAL MOTOR TRUCK COMPANY
DETROIT MICHIGAN

SIGNAL

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

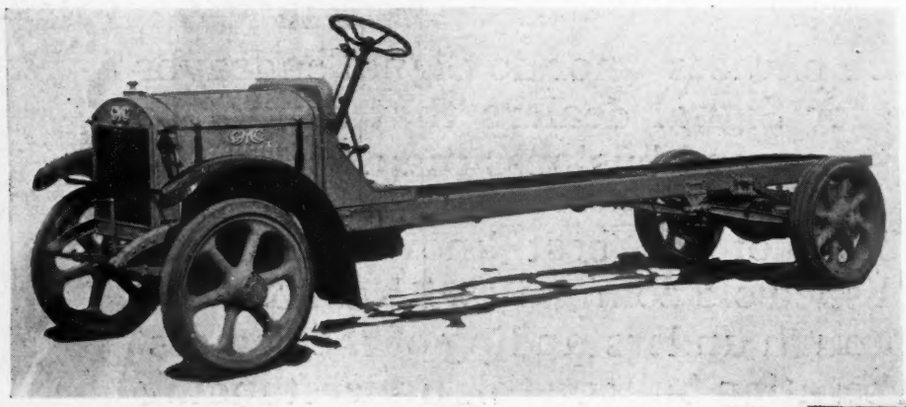
G M C Brings Out New Two-Ton Model

A new model in a two ton truck with a wheelbase of 191½-in. has been added to the regular line of the General Motors Truck Co., of Pontiac, Mich. Production has already been started on this model which will sell at $2475 f. o. b. factory.

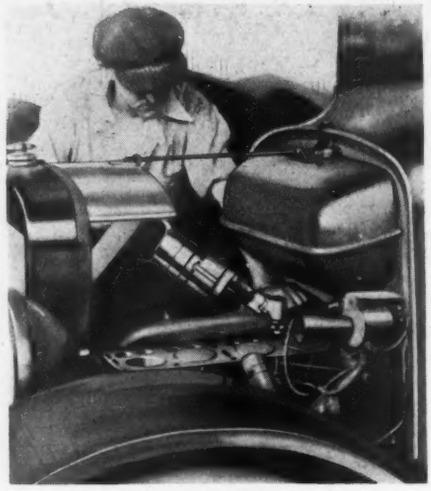
The new model was added, by this company, to meet the demand of lumbermen, furniture dealers and moving van operators for a truck which would cart a long body at the same time not demanding an excessive weight.

It has also been found that this chassis is admirably suited to bus work and the factory has made special provision to equip this new model with vacuum tank, pneumatic tires, special fenders, gas tank and extra large generator.

With the addition of this present model the company now has eight standard production types of truck chassis. They include the one ton chassis, which is also equipped with four types of express bodies; the two ton chassis in a shorter wheelbase; the three and a half ton model; the five ton chassis and the new truck, together with three tractor models.



G M C 2-Ton, 191½-in. Wheelbase Chassis Just Announced



Showing the Advantage of the Offset Attachment

The offset attachment is designed to slip into the chuck of the machine just the same as the straight rod driver spindles. With the offset attachment, the operator can, if he desires, grind all valves from the side of the engine block instead of from the top of the engine. The "double-action" revolving and oscillating motion of the machine itself is transferred to the spindle of the offset attachment. No matter how inaccessible the valves may be, the offset attachment reaches them with ease.

Price, $45 for 110 volt current and $48 for 220 or 32 volt.

New Type "Double-Action" Valve Grinder

A. H. Petersen Mfg. Co., Milwaukee, Wis., manufacturers of portable electric tools, recently perfected a new type of valve grinding machine, known as the Petersen "Double-Action" Valve Grinder.

By a unique gear arrangement, this machine automatically combines a revolving and an oscillating motion in grinding the valves and thus duplicates the motion obtained by using hand-grinding tools.

The machine is light, compact and easily handled. It is equipped with an offset attachment which permits easy access to valves located in the hard-to-get-at places.

Every type of valve can be handled with this machine. It comes fully equipped with all the necessary attachments. Three removable driver spindles, 3 in., 6 in. and 12 in. long, which slip into the chuck of the machine are furnished. Each spindle will take any of the various driver blades, which are designed for contact with different types of valves.

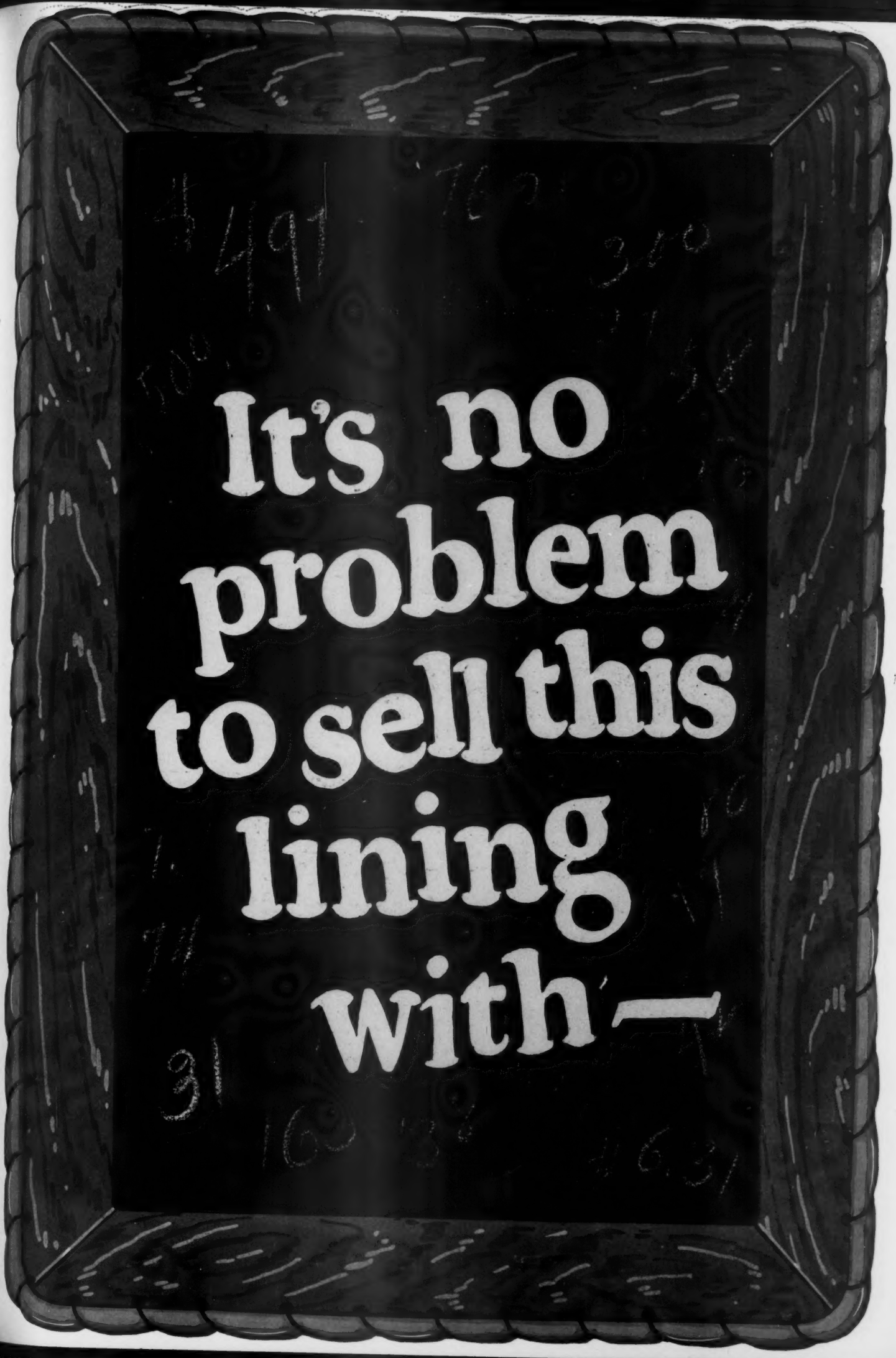
National Hoist in Two Capacities

In response to the favor accorded the National Hoist for Ford Trucks by the trade. the National Hoist and Body Co., Travelers Bldg., St. Paul, Minn., decided to augment this line by building a larger hoist of the same principle of construction for trucks of 1½ tons capacity.

The Ford Hoist is described as being of simple construction and inexpensive in operation. The entire unit can be installed by anyone in two hours' time. All of the mechanism is located under the body between the channel frame. Twenty turns of the manually operated crank will give a full elevation of 45 degrees, which is sufficient to dump any kind of material. But 20 seconds, is said to be required to raise the body to its maximum point. Not only can the body be locked at any point of its elevation, but it can be locked in its normal position on the chassis as well. It is carefully and substantially built of high grade material. All parts are guaranteed against breakage for one year.

The new hoist for 1½ ton trucks, of which there are at present quite a number in use on Garford, Commerce and GMC, is practically of the same construction, differing only in that it is built for heavier service. Sixty turns of the crank enables the driver to easily and without much effort raise 2½ yds. of gravel to the maximum discharging angle of 45 degrees. The crank member being a separate unit can conveniently be located anywhere along the frame. Either Alemite lubrication or grease cups is used.

Showing Simplicity of National Hoist.


It's no
problem
to sell this
lining
with—

This sign

Outside your door this bright metal sign is a business getter. It reminds passing motorists that their brakes may need re-lining and invites them to do business with you. It's free to all dealers who sell Johns-Manville Non-Burn. Get yours.

+ this rack

Inside your shop it performs a triple duty. It's a silent salesman; it's a handsome piece of shop furniture; and it's a mighty handy place to stock brake lining. Free with initial 300 ft. order of Johns-Manville Non-Burn.

+ these ads

Get some of these ads into the newspapers of your town. Don't wait until the motorist comes into your shop. Go into his home after him. We have plates all ready for newspaper insertion over your name. Ask for them.

+ Quality lining

The finest sales help we can give a dealer is a good product to sell. That is the reason for the quality built into our lining. It is made of specially selected asbestos fibre—densely woven. Motorists who use it once demand it again.

+ this name

In the mind of the American public this name has been associated for over forty years with the term "asbestos specialists". It will help you a great deal to be able to use this name in selling asbestos brake lining. Try it and see.

JOHNS-MANVILLE

+ these distributors

The next page of this magazine is where good fellows get together. You probably know many of them. Look 'em over.

Over →

Choose Your Distributor

Alabama
Moore-Handley Hardware Co., Birmingham
Johnson Tire & Auto Co., Montgomery

Arkansas
Crow-Burlingame Co., Little Rock

California
Chansior & Lyon Co., Fresno
The Banta Company, Los Angeles
Chansior & Lyon Co., Los Angeles
Featherstone, E. A., Los Angeles
McCoy Motor Supply Co., Los Angeles
Chansior & Lyon Co., Oakland
Weinstock-Nichols Co., Oakland
Kimball-Upson Co., Sacramento
P. W. Gavin Company, San Diego
Chansior & Lyon Co., San Francisco
McCoy Motor Supply Co., San Francisco
Weinstock-Nichols Co., San Francisco
California Auto Supply Co., Stockton

Colorado
Auto Equipment Co., Denver
Foster Auto Supply Co., Denver
Motor Accessories & Tire Co., Pueblo

Connecticut
Hessel & Hoppen Co., New Haven
Motor Tire Service Co., Putnam

District of Columbia
National Electrical Supply Co.
Rubel, Chas., & Co.

Florida
Baughman Company, G. Norman, Jacksonville
Baughman Company, G. Norman, Miami
Baughman Company, G. Norman, Tampa

Georgia
Alexander-Seewald Co., Atlanta
Ozburn-Abston & Co., Atlanta
Cody Co., W. Z., Columbus

Illinois
Automobile Supply Co., Chicago
Chicago Automobile Supply House, Chicago
Motor Car Supply Co., Chicago
Sheridan Auto Supply Co., Chicago
Tenk Hardware Co., Quincy
Washington Auto Supply Co., Washington

Indiana
Orr Iron Co., Evansville
Lomont & Co., Ft. Wayne
The I. J. Cooper Rubber Co., Indianapolis
Goodlin Auto Equip. Co., South Bend

Iowa
Cedar Rapids Auto Supply Co., Cedar Rapids
Sieg Co., Davenport
Herring Motor Co., Des Moines
Repass Auto Co., Waterloo

Kansas
The Frank Colladay Hardware Co., Hutchinson
The Weldon Motor Supply Co., Salina
Southwick Auto Supply Co., Topeka
The Massey Hardware Company, Wichita

Kentucky
Peaslee-Gaulbert Co., Louisville

Louisiana
Shuler Auto Supply Co., New Orleans
Interstate Electric Co., Shreveport

Maine
The Farrar-Brown Company, Inc., Portland

Maryland
Auto Supply Co., Baltimore
Coggins & Owens, Baltimore

Massachusetts
Linscott Supply Co., Boston
Motor Tire Service Co., Fitchburg
Duncan & Goodell Co., Worcester
Motor Tire Service Co., Worcester

Michigan
E. A. Bowman, Inc., Detroit
Tisch Auto Supply Co., Grand Rapids

Minnesota
Kelley-Duluth Co., Duluth
Minneapolis Iron Store Co., Minneapolis
Reinhard Bros. Co., Minneapolis
Williams Hardware Co., Minneapolis
Nicols, Dean & Gregg, St. Paul

Missouri
Joplin Supply Co., Joplin
The Faeth Company, Kansas City
Ayers Farmer Auto Supply Co., St. Joseph
Beck & Corbitt Iron Co., St. Louis
Fred Campbell Auto Supply Co., St. Louis
Geiler, Ward & Hasner, St. Louis
Hermann-Sanford Company, Springfield

Montana
Northwestern Auto Supply Co., Billings

Nebraska
Nebraska Buick Auto Co., Lincoln
Storz-Western Auto Supply Co., Omaha

Nevada
Nevada Auto Supply Co., Reno

New Hampshire
Thompson & Hoague Company, Concord

New Jersey
Economy Auto Supply Co., Newark
Pruden Hardware Co., Newark

New York
Albany Hardware & Iron Co., Albany
Martin-Evans Co., Brooklyn
H. D. Taylor Co., Buffalo
Barker, Rose & Clinton Co., Elmira
Weaver-Ebling Automobile Co., New York City
Pruden Hardware Co., W. E., New York City
Whittemore-Sim Co., Inc., New York City
The Olmsted Co., Inc., Syracuse

North Carolina
Carolinas Auto Supply House, Charlotte
Ko-Mo Supply Co., Charlotte
Automobile Supply Co., Wilmington

North Dakota
Grant-Dadey Company, Fargo

Ohio
The Penn. Rubber & Supply Co., Akron
C. & D. Auto Supply Co., Cincinnati
The I. J. Cooper Rubber Co., Cincinnati
The Penn. Rubber & Supply Co., Cincinnati
The Penn. Rubber & Supply Co., Cleveland
The I. J. Cooper Rubber Co., Columbus
The Penn. Rubber & Supply Co., Columbus
The I. J. Cooper Rubber Co., Dayton
The Penn. Rubber & Supply Co., Toledo
The Penn. Rubber & Supply Co., Youngstown

Oklahoma
Severin Tire & Supply Co., Oklahoma City
Severin & Company, Tulsa
Machinery & Supply Co., Tulsa

Oregon
Wiggins Company, Inc., Portland
Chansior & Lyon Co., Portland

Pennsylvania
Motor Accessories Co., Allentown
Central Supply Co., Altoona
The Penn. Rubber & Supply Co., Erie
Front Market Motor Supply Co., Harrisburg
General Auto Supply Co., Harrisburg
Johnstown Auto Co., Johnstown
General Auto Supply Co., Lancaster
The Penn. Rubber & Supply Co., Oil City
Berrodin Auto Supply Co., Philadelphia
Gaul, Derr & Shearer Co., Philadelphia
Roberts Electric Supply Co., H. C., Philadelphia
Dyke Motor Supply Co., Pittsburgh
Jackson Motor Supply Co., Pittsburgh
General Auto Supply Co., York

Rhode Island
Belcher & Loomis Hardware Co., Providence

South Carolina
Franke Co., Inc., C. D., Charleston
D. W. Alderman, Jr., Inc., Florence
D. W. Alderman, Jr., Inc., Greenville

South Dakota
L. & L. Motor Supply Co., Sioux Falls

Tennessee
Southern Auto Supply Co., Chattanooga
The I. J. Cooper Rubber Co., Knoxville
Ozburn-Abston & Co., Memphis
Auto Supply Co., Nashville
The I. J. Cooper Rubber Co., Nashville

Texas
Ferris-Dunlap Co., Dallas
Tri-State Motor Company, Inc., El Paso
The Equipment Co. of Texas, Fort Worth
Meyer Co., Jos. F., Houston
The Southern Equipment Co., San Antonio
McCauley-Ward Motor Supply Co., Waco

Utah
Inter-Mountain Electric Co., Salt Lake City
Motor Mercantile Co., Salt Lake City

Vermont
Vermont Hardware Co., Burlington

Virginia
The Owens-Merritt Co., Danville
Piedmont Hardware Co., Danville
Crump Co., Benj. T., Richmond
Talman Auto Supply Co., Richmond
Meadows-Price Co., Roanoke

Washington
Chansior & Lyon Co., Seattle
Reynolds & Reynolds, Seattle
Chansior & Lyon Co., Spokane
Holley-Mason Hardware Co., Spokane
Chansior & Lyon Co., Tacoma
Reynolds & Reynolds, Tacoma

West Virginia
Williams Hardware Co., Clarkesburg

Wisconsin
Clemons Auto Supply Co., Eau Claire
Andrae & Sons Co., Julius, Milwaukee
Shadbolt & Boyd Iron Co., Milwaukee
Tisch Auto Supply Co., Milwaukee
Western Motor Supply Co., Milwaukee

Wyoming
Auto Equipment Co., Casper

CANADA

Alberta
The Motor Car Supply Co., of Canada, Ltd., Calgary
The Motor Car Supply Co., of Canada, Ltd., Edmonton

British Columbia
Marshall-Wells, B. C., Ltd., Vancouver

Manitoba
Wood, Vallance, Ltd., Winnipeg

New Brunswick
The Lounsbury Company, Ltd., Newcastle

Nova Scotia
J. J. Snook Ltd., Truro

Ontario
The Nicholson Sales & Service Corp., Ltd., Hamilton
A. Chown & Co., Ltd., Kingston
Just Motors Limited, Ottawa
Johnson-Dean, Ltd., Toronto
Samuel Trees & Co., Ltd., Toronto
Bowman-Anthony Co., Windsor

Saskatchewan
Wood, Vallance, Limited, Regina

FOREIGN

Australia
Duncan & Co., Melbourne
Cornell, Ltd., Adelaide
Chas. Atkins & Co., Ltd., Perth
Canada Cycle & Motor Agency, Brisbane
Hislop, Lloyd & Co., Sydney

Great Britain and Ireland
A. C. R. Greene & Co., Ltd., London

Japan and Korea
Takemura Company, Yokohama

Mexico
Mexico Auto Supply Co., Mexico City

New South Wales
Hislop, Lloyd & Co., Sydney

New Zealand
Jas. J. Niven & Co., Ltd., Wellington

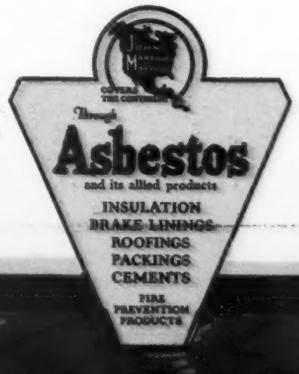
Norway, Sweden and Denmark
F. Bulow & Co., Copenhagen

Panama
The Torbert Wholesale Rubber & Accessory Co., Panama City

Spain
Luis R. Villamil, Madrid

Union of South Africa
Bartle & Co., Ltd., Johannesburg

Uruguay
Clericetti & Barrella, Montevideo



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CANADIAN JOHNS-MANVILLE CO., Ltd., Toronto

News of the Trade in Brief

Plans Maturing for National Road Show

Plans for the 1924 Convention and road show of the American Road Builders' Association are nearly completed. These two events are to be held simultaneously the week beginning January 14th at Chicago. The convention headquarters are to be in the Congress Hotel while the road show will be held in the Coliseum and the adjoining Greer Building.

Frank Page, president of the American Road Builders' Association, has appointed Chas. M. Upham manager of the convention and road show. Mr. Upham will report directly to the executive committee of the American Road Builders' Association. With the approval of that committee, Mr. Upham will appoint several committees to handle various features of the two big events of the year in the highway industry.

Mr. Upham will open an office in Chicago well in advance of the date of the convention and road show. Meanwhile, arrangements are being made so that the date of drawings for space in the road show may be announced shortly. General features of the convention also have already mapped out to an extent that will permit the details to be determined before the end of September.

S. F. Beatty, president of the Highway Industries Exhibitors' Association, has advised Mr. Page and Mr. Upham that that organization will co-operate in every possible way to make the 1924 road show and convention successful. With the two organizations working together in close harmony, maximum results for both these events are assured.

All inquires regarding the convention and road show should be addressed to the home office of the American Road Builders' Association at 37 West 39th Street, New York City, until the announcement of the location of the temporary Chicago office has been made.

FORD WILL NOT BUILD 2½ TON TRUCK

With reference to a report circulated that the Ford Motor Company is to add a 2½ ton motor truck to its line this year, equipped with a Fordson motor, General Manager Charles E. Sorenson made the following statement to COMMERCIAL CAR JOURNAL:

"The Ford Motor Company has absolutely no plans for adding a two or two-and-a-half ton motor truck to its line. Nor are we going to build a new type of light truck. We have been building the Ford motor truck for several years and it has given excellent satisfaction. We see no reason for changing it.

"As to reports that we are going to begin building the Ford truck with cab and body complete, we have always produced the truck that way for those who wished the complete outfit."

This frank statement should set at rest unauthorized reports founded on rumor.

Electric Railway Men Put Stamp of Approval on Buses

Frank approval of the use of motor buses as supplementary service to the electric railways on one hand and a statement that, despite the increasing use of private motors cars and buses, the electric railways of the United States are carrying more passengers than ever in the history of the industry, were the outstanding topics before the summer meeting of the Wisconsin Electric Railway Operators, at Oshkosh, Wis.

"Only recently have the manufacturers of buses." said Henry Cordell, master mechanic of the Chicago North Shore & Milwaukee Railway Co., "met the concerted and constructive criticism which the electric roads as operators alone can give. This will lead to the building of improved equipment which may compare favorably with the electric cars.

"The majority of electric railway companies are introducing motor buses as supplementary service because of the desire to serve the public, and, incidently to improve feeder service for their own electric lines."

Howard Smith, of the General Tire & Rubber Co., declared that bus transportation is largely dependent upon the improvement of tires just as the development of the private automobile was governed by the improvements in the tire business. "We are convinced," said Mr. Smith, "that in a few years, transportation will be rolling on rubber, and we are constantly striving to overcome various problems involving tire equipment."

CONVENTIONS

Atlantic City, N. J., October 8 to 12, 1923—Convention and exhibition of the American Electric Railway Association, at Million Dollar Pier. Office Address 8 W. 40th St., New York City.

Atlantic City, N. J., October 15 to 18, 1923—Sixth annual convention of the Automobile Accesories Branch of the National Hardware Association of the United States at the Shelbourne.

Bakersfield, Cal., October, 1923—Annual convention of the California Automobile Trade Association.

Boston, Mass., September 19 to 22, 1923—Fall convention of the Motor & Accessory Manufacturers Association at Copley-Plaza Hotel, M. L. Heminway, General Manager, 250 W. 57th St., New York City.

Buffalo, N. Y., September 24 to 28, 1923—Iron and Steel Exposition of the Association of Iron and Steel Electrical Engineers, at the Broadway Auditorium.

Buffalo, N. Y., October 1 to 5, 1923—12th annual Safety Congress of the National Safety Council, Hotel Statler (Automotive Sessions October 2 and 3).

Chicago, Ill., January 14 to 19, 1924—Annual convention and good road show of the American Road Builders' Association. Congress Hotel, Coliseum and Greer Bldg. S. T. Henry, , Chrm. Publicity Committee, 37 W. 39th St., New York City.

Chicago, Ill., November 12 to 17, 1923—Annual convention and exhibition of the Automotive Equipment Association, at the Coliseum.

Cleveland, Ohio, October 24 to 26, 1923—30th annual convention of the National Association of Farm Equipment Manufacturers, Hotel Statler.

Cleveland, Ohio, October 25 and 26, 1923—Production meeting of the Society of Automotive Engineers.

Columbus Ohio, December 5 and 6, 1923—Annual convention of the Ohio Automotive Trade Association at the Hotel Deshler, E. J. Shover, Secy-Mgr., 404 Central National Bank Bldg., Columbus Ohio.

Detroit Mich., November 21, 1923—Convention of the Motor Truck Industries, Inc.

Detroit, Mich., January 22 to 25, 1924—Annual Meeting of the Society of Automotive Engineers.

Detroit, Mich., May 1924—First International Motor Transport Congress. National Automobile Chamber of Commerce, G. F. Bauer, secretary of Foreign Trade Committee, N. A. C. C.

New York, N. Y., November 13 to 15, 1923—Annual convention of the National Tire Dealers' Association, Greater New York Tire Dealers' Assn., as hosts.

New Orleans, La., April 1924—Spring meeting of the Automotive Equipment Association.

SHOWS

Boston, Mass., March 8 to 15, 1924—22nd annual, passenger car, truck and accessory show, of the Boston Automobile Dealers Assn. Inc., and the Boston Commercial Vehicle Dealers Assn. Inc., Mechanics Hall, Chester I. Campbell, Mgr.

Chicago, Ill., November 12 to 17, 1923—Annual exhibition of the Automotive Equipment Association at the Coliseum.

Chicago, Ill., January 14 to 19, 1924—Annual road show of the American Road Builders Association, at the Coliseum and Greer Bldg.

Cincinnati, Ohio., November 17 to 24, 1923—Automobile Accessory and radio show of the Cincinnati Automotive Trade Association Masonic Hall, John J. Behle, Mgr.

Dallas, Texas, October 13 to 28, 1923—Annual Fall show of the Dallas Automobile Trades Association.

Edwardville, Ill., October 19 to 21, 1923—Annual automobile show of Madison County Automotive Association, A. Bothman, Mgr

Fresno, Cal., September 28 to October 5, 1923—Automobile show, auspices of Fresno Automobile Dealers' Assn. Ray Wakefield, Mgr.

Little Rock, Ark., October 8 to 13, 1923—Annual automobile show, auspices of Little Rock Automobile Dealers' Assn., A. W. Parke, Mgr.

Memphis, Tenn., September 23 to 30, 1923—Annual Automobile Show, Tri-State Fair Grounds, Memphis Automobile Dealers' Assn. Thomas H. Smart, Mgr.

New York, N. Y., October 17 to 27, 1923—Annual exhibition of electric vehicles, Electrical and Industrial Exposition at Grand Central Palace. Commercial trucks, industrial trucks, passenger cars, storage batteries and battery charging accessories.

New York, N. Y., January 5 to 12, 1923—24th annual automobile show under the auspices of the National Automobile Chamber of Commerce, 8th Coast Armory, passenger cars and accessories. S. A. Miles, Mgr., 366 Marlin-Rockwell Bldg., 46th and Madison Ave., New York City.

Salt Lake City, Utah, October 1 to 6, 1923—Fall automobile show in conjunction with the Utah State Fair, Transportation Bldg. Carl L. Snow, Mgr.

Waco, Texas, October 20 to November 5, 1923—Annual automobile show of Waco Automobile Dealers' Assn., Texas Cotton Palace Exposition.

M. A. M. A. Convention Will Consider Widening of the Automotive Market

"Widening the Market for Automotive Products" is to be the dominent theme of the fall convention of the Motor and Accessory Manufacturers Association to be held at the Copley-Plaza Hotel Boston, Mass., September 19 to 22. A well chosen program composed of the industry's representative speakers will cover the four days of the meeting. It is expected that several hundred of the leading executives of the firms affiliated with the M. A. M. A. will be in attendance.

The program has been announced as follows:

Wednesday, September 19th; afternoon session; Widening the Market for Automotive Products by:

I. Building More and Better Roads; Roy Chapin, Chairman, Hudson Motor Car Co., Detroit, Mich.

II. Providing Ample Space to Drive and Park Cars in Our Cities; Dr. John A. Harriss, Deputy Police Commissioner, New York City, N. Y.

III. Reducing Maintenance Costs and Increasing Service Efficiency; Speaker to be announced.

IV. Removing Unfair Automotive Taxes; Harry Meixell, Secretary, Motor Vehicle Conference Committee, New York City, N. Y.

(Discussion after each Paper)

President W. O. Rutherford, who is vice-president of the B. F. Goodrich Rubber Co., of Akron, Ohio ,will preside at this opening session.

Wednesday, September 19th; evening session; B. M. Asch, president of Asch and Company, New York City, Chairman,topic:

Widening the Market for Automotive Products by Developing Jobber Distribution.

Thursday, September 20th; morning session; A. H. D. Altree, vice president, American Bosch Magneto Corp., Springfield, Mass., chairman, topic:

How to Sell More and Lose Less.

Thursday, September 20th, afternoon session; E. P. Chalfant, Chairman, Gill Mfg. Company, Chicago, Ill., Chairman; topic:

Selling the World American Motor Transportation.

Friday, September 21st, morning session; J. P. Hach, Traffic Manager, L. C. Chase & Company, Boston, Mass., Chairman; topic:

Delivering the Goods.

Friday, September 21st, afternoon session; E. W. Clark, Advertising Manager, Clark Equipment Company, Buchanan, Mich., Chairman; topic:

How Advertising Can Help Sell More Automotive Products.

The relation between rail transportation and the automobile industry will receive considerable attention at this Convention. Gerrit Fort, vice-president, Boston and Maine R. R., who has made an intensive study of motor truck transportation, will tell "How the Railroads Are Preparing to Move the Product of the Automotive Industry."

"The Shipper's Idea of Adequate Railroad Service" will be set forth by W. H. Chandler, Traffic Manager, Boston Chamber of Commerce and Ex-President, National Industrial Traffic League.

W. M. Twohig, Traffic Manager, Willard Storage Battery Company, will discuss "Shippers' Distribution Problems."

Two representative leaders of the industry who have recently returned from Europe will address the Thursday afternoon sessions, devoted to foreign trade subjects.

J. F. Kelly, Jr., Export Manager, Electric Storage Battery Company will give "A First-Hand View of the European Situation and Overseas Markets."

F. E. Titus, Vice-President, International B. F. Goodrich Rubber Company, will take as his subject: Putting Over the Message of American Quality and American Service.

S. W. Dorman, Vice-President and General Manager, Overseas Motor Service Corp., New York; and Chairman, M. & A. M. A. Foreign Trade Committee will tell How the Smaller Manufacturer Can Get Foreign Business.

Because of the acuteness of the automobile traffic problem in most American cities, the Convention will lay special stress on this situation. In addition to the talk by Dr. John A. Harriss, Special Deputy Police Commissioner, New York City, on the opening day, on Providing Ample Space to Drive and Park Cars in Our Cities; H. W. Slauson, Engineering Service Manager, Kelly-Springfield Tire Company will speak at the Advertising session on Friday afternoon, September 21st; taking as his topic "Are We Properly Meeting the Need for Improved Traffic Conditions?"

Other subjects to be considered at the session which will feature advertising matters are: How Better Brake Equipment Can Sell More Cars, which is expected to stimulate a lively discussion on four-wheel brakes; and How the Advertising of M. & A. M. A. Members Can Help the National Automobile Shows. Speakers for these last two topic have not yet been announced.

Sidney S. Meyers, General Counsel of the Motor and Accesory Manufacturers Association will deliver an address on legal phases of the credit and business situation. The Convention will be run as one general meeting, embracing all departments. All meetings will be held in the foyer, main floor of the Copley-Plaza Hotel. On Thursday night there will be a boat trip, shore diner and dance at Pemberton Inn, Nantasket Beach. A Golf Tournament will be held on Saturday, September 22nd.

Hon. Mayor Curley, Mayor of Boston, will welcome the delegates and will also give a talk on the city's methods of meeting the problems of motor traffic congestion.

Plans for the Boston Convention have been in charge of the following two committees:

General Program Committee

J. M. CcComb, Vice-President, Crucible Steel Co. of America (Chairman)
Maurice Switzer, Vice-President, Kelly Springfield Tire Company.
S. W. Dorman, Vice-Pres. and General Manager, Overseas Motor Service Corp.
E. P. Chalfant, Chairman, Gill Mfg. Co.
P. C. Gunion, Advertising Manager, Hyatt Roller Bearing Company.
B. M. Asch, President, Asch & Co., Inc.
H. W. Angevine, Treasurer, Hyatt Roller Bearing Company.
A. Pauli, Credit Manager, S. K. F. Industries.
M. L. Heminway, General Manager, M. & A. M. A.
C. A. Burrell, Manager of Credit Department, M. & A. M. A.
H. Deuster, Manager of Traffic Department, M. & A. M. A.
M. Lincoln Schuster, Manager of Educational Dept. M. & A. M. A.

Boston Committee of Arrangements

F. T. Moore, District Manager of B. F. Goodrich Rubber Co. (Chairman)
J. P. Hach, Traffic Manager, L. C. Chase Company.
H. K. Johnson, F. S. Carr Company.
W. M. Lorenz, Boston Manager, Willard Storage Battery Company.
B. J. Moses, Gray and Davis Company
J. T. Sullivan, Automobile Editor, Boston Globe.

S. A. E. Meeting to be Held During Detroit Show

Announcement was made last Spring that the next annual meeting of the Society of Automotive Engineers would be held in Detroit. The dates were not set at the time, but they have now been chosen definitely as January 22 to 25 to coincide with Automobile Show Week in Detroit. This arrangement will enable those who attend the meeting to inspect passenger cars and trucks of the latest design many of which will come direct from the New York Show to be exhibited by the Detroit Automobile Dealers' Association. The advantage of holding the S. A. E. meeting simultaneously with a representative exhibit of motor vehicles will thus be preserved.

It is expected that the 1924 meeting of the S. A. E. will be the largest in its history because of its location near the production center of the automobile industry. Engineering papers are being received at this early date and the technical meetings are expected to include the names of many experts. The meetings will be held in the General Motors Building which is becoming a convention and meeting center for the automobile industry.

Automotive Electric Manufacturers in Convention

As we go to press, the Automotive Electric Association is in convention at the Forest Inn, Eaglesmere Park, Pa. The convention has taken the form of a general meeting of all classes of members, the only one of which is held each year. Specialized committees within the association are to meet. These are as follows: Storage Battery Division; Committee on Commercial Ethics; Standarization Committee; Legal and Patent Committee; Advertising Committee and the Committee on Foreign Service.

The arbitration procedure set up within the association to handle patent differences has been of incalcuable benefit to the entire automotive industry. There has been no court litigation within the Association during the six years of its existence.

Specialized service is strongly advocated by the electrical equipment manufacturers. There are approximately 2100 "authorized" starting and lighting and ignition service stations in the United States and the number is constantly increasing. These stations are assisted in every possible way by the equipment manufacturers to render dependable service at reasonable cost.

The equipment manufacturers are giving serious consideration to trade paper advertising as a means of still further improving the character of specialized electrical service and of extending their field organizations.

The official service stations of the equipment manufacturers will be represented at this meeting by members of the Board of Governors of the Automotive Electric Service Association. Such a joint meeting afford admirable opportunities for the exchange of views on the subject of service between the equipment manufacturers and their field representatives.

An extensive survey of facilities in foreign countries for automotive electrical service has been made during the past few months and the question of improving and extending such facilities will be given consideration at this meeting.

Dimensional standardization of electrical units is a very knotty problem for the reason that motors and generators are supplemental equipment, consequently the mountings are governed largely by engine design. While it is true that the great variation of models and types now in use on motor vehicles add considerably to the service cost, it is also true that improvements in engine design serve to reduce the cost of motor transportation in the way of increase mileage, reduction in weight in relation to horsepower, etc. If any ideal condition is reached with respect to dimensional standarization of motors and generators it must be accomplished in a way that will not interfere with improvements in engine design.

Work on the code of commercial practice has been under way for some time and owing to the nature of the subject the present code will be subject to consideration and revision for a more or less indefinite period.

Iron and Steel Exposition This Month

John F. Kelly, national secretary of the Association of Iron and Steel Electrical Engineers extend to the readers of COMMERCIAL CAR JOURNAL, a special invitation to attend the Iron and Steel Exposition, being held at the Broadway Auditorium, Buffalo, N. Y., September 24 to 28, 1923.

Over one million dollars worth of apparatus will be on display and will represent what 150 of the largest manufacturers in the U. S. have developed for the use of the industries during the past year.

A special feature will be the complete electrified foundry which will be in actual operation producing finished castings. Starting with the electric furnace. Every operation known in modern foundry practice will be exemplified and as this is the first time that this feat has been attempted in America, it will attract thousands of foundrymen from all over the United States.

E. H. Fitch, New President of the Republic Rubber

With the culmination of his duties as receiver for the Republic Rubber Co., C. H. Booth has decided to relinguish his present position as president of the Republic Rubber Co. of Youngstown, Ohio.

It was the earnest wish of the financial interest of the new company that Mr. Booth continue his active association with the Republic Rubber Co. until all the details of reorganization had been definitely decided and until the new organization was satisfactorily launched. That time has come and E. H. Fitch, former vice-president, and the man whom Mr. Booth chose for his right hand man during the receivership, has been made president of the Republic Rubber Co., to carry on the constructive policies established by Mr. Booth.

Mr. Fitch, has had a wide experience in the business world. Graduating from Cornell University, he has for seven years been district manager of the Standard Oil Co., with headquarters at Akron. He afterwards became district manager of the Philadelphia division of the Diamond Rubber Co. which position he held for 14 years. When the Philadelphia offices of this concern were consolidated with those of the Goodrich Rubber Co., he was placed in charge. Near the close of 1921 he accepted the position of general manager of the Republic Rubber Co. in Youngstown. His sales policies have been built to help the dealer solve their problems.

Mr. Fitch announces that there would be no further change in the organization under his supervision. "It is the wish of the board of directors that the Republic Rubber Co., remain an independent integrated concern and that it retain its character as a community organization," he said. The Republic Rubber Co. was recently sold to the Lee Rubber & Tire Co. of Philadelphia and New York.

International Motor Transport Congress Backed by N. A. C. C.

Those within the truck industry should receive with enthusiasm the announcement that the first international motor transport congress is to be held in Detroit May 1924. The National Automobile Chamber of Commerce, backing the movement will assure its success. The message of the utility of the automotive vehicle and a "better understanding of the economic factors underlying motor transportation in every part of the world" is to form the nucleus of the meeting.

The plans, which are in a tentative state, include a four day convention to while will be invited, representatives from the various nations, trade association men, dealers and manufacturers of automotive products, the automobile trade press and those influencial in the industrial life of the automobile.

The work of preparing for the convention is now in the hands of Foreign Trade Committee; which consists at the present time of H. M. Robins, Jay P. Rathbun, H. B. Phipps, J. D. Mooney, Howard S. Welch, and G. F. Bauer, secretary. J. Walter Drake, who was recently made assistant secretary of the Department of Commerce of the United States, has been acting as chairman of the committee but since his resignation to accept the government position, no successor has been named.

Jobber-Manufacturer-Booster Outing Success

The annual outing of the Boosters Club, N. E. No. 1, at which the New England jobbers were guests, was held at the Hummocks, R. I., August 24. The party assembled at the plant of the Apco Mfg. Co., Providence, and was conveyed in cars to the Hummocks where, after a lunch, athletic events were indulged in. The Boosters ball nine won from the jobbers by a score of 6 to 2. Then followed nine other events with two prizes for each.

Frank Chase was presented a handsome solid silver bowl with inscription by the New Englanders in recognition of his services as chairman of the advisory committee of that body.

McElhone Advertising Director of Eaton Axle & Spring Company

A. J. McElhone, who has been in the advertising business since 1915, has been appointed advertising director of the Eaton Axle & Spring Co. His experience has covered direct-by-mail advertising, and publication advertising, especially in the automotive field. He was for a time account executive of the Byron G. Moon agency and publicity manager for the Class Journal Co. For the past year he has been handling all the advertising for the Cox Bros., Mfg. Co., which recently became part of the Eaton Axle & Spring Co.

Electric Vehicle Exhibit is Planned for October

Plans covering the exhibition of the electric vehicle section of the annual Electrical and Industrial Exposition at the Grand Central Palace, New York, from October 17 to 27, call for the products of manufacturers of electric commercial trucks, industrial trucks, passenger cars and battery charging accessories.

The whole north side of the second floor of the Grand Central Palace will be devoted to exhibits showing electrical transportation methods. There will be finished trucks showing the different types of bodies, stripped chassis showing the principles of electric vehicle construction and special displays of parts and accessories. The monthly meeting of the Electric Motor Truck Association to be held during the show, will be devoted to the discussion of transportation problems and a number of speakers from out of town will have places on the program.

Service Equipment Associates Hold Joint Sales Conference

Practically the entire active selling organization of 15 of the leading manufacturers of service equipment met in a joint sales conference, at French Lick, Ind., August 2 to 4.

In most cases the presidents of the firms, sales managers, advertising managers, territorial managers and salesmen were present, making a total attendance of 105 representing fifteen of the seventeen concerns who are members of the Service Equipment Associates.

The three main thoughts which all were asked to carry away with them were:

First. That service equipment is a separate and distinct line of merchandise and requires an individual sales plan; that it cannot be expected that service equipment can be sold satisfactorily under the same plan as items which are resold by the dealer.

Second. That it be suggested to the jobber who establishes a service equipment department that he put in charge of this department a salaried man of a high type who can render real assistance to the dealer along educational lines, both in the use of the equipment and in showing him how to make the equipment pay dividends. It was suggested that the jobber's present salesmen continue to receive their commission on service equipment in their territories.

Third. That service equipment should be sold for what it will do—not for what it is. In other words, the dimensions, number of nuts and bolts, horsepower, etc., is not the basis on which to sell service equipment to the dealer, but rather on the basis of what it will do and what it will earn for the dealer.

The entire meeting was divided up into six geographical groups designated as follows:

New England; Middle Atlantic; South East; South West; Great Lakes; North West. These groups each held their own meetings and elected chairmen.

The members of the Service Equipment Associates are working out a far-reaching educational campaign of which the French Lick meeting was a start, which will be worked out along broad general lines, the expressed object of the group being to broaden the market for service equipment.

Bates Withdraws From Sterling Tire Corporation

Announcement is made the Charles Austin Bates, who in 1908 organized the Sterling Tire Corp., at Rutherford, N. J. and who held the controlling interest, disposed of that interest the first of this year and has withdrawn completely from participation in the management.

The management is continued by A. A. Altschuler, who has been president since 1919. Other officers are Otto Basten, vice-president who has been production manager for ten years; Joseph A. Miller, who has been treasurer from the date of organization; W. A. Ryan, secretary and auditor. Bartlett Greene, until recently was secretary, has resigned to accept a position with the Fidelity & Deposit Company of Maryland; Frederick A Goddard, second vice-president, resigned to become treasurer and general manager of the Automotive Hardware Corporation, New York.

Winther Bought by Stockholders' Committee

The assets of the Winther Motors, Inc., Kenosha, Wis., have been purchased by the stockholders reorganization committee of the company, the sale at $130,150 having been approved by the referee in bankruptcy. The only other bulk bidder was the E. L. Essley Machinery Co., of Milwaukee and Chicago.

The plans now include the formation of a new corporation capitalized at $500,000 by the committee. A period of three months has been granted to the committee in which to make complete payment.

Dr. E. W. Timm, Milwaukee is chairman of the reorganization committee and Edward C. Kraemer, Milwaukee is secretary. The committee has been at work for six months and a short time ago obtained sufficient financial support from stockholders to make possible an almost complete cash payment.

Sales Figures of General Motors Cars to Date Released

Preliminary combined sales in August of the American and Canadian passenger and commercial car manufacturing divisions of General Motors totaled 65,000 cars and trucks; this compares with preceding months and further with corresponding months of a year ago as follows:

Number of Cars and Trucks Sold

	1923	1922
Jan.	49,162	16,088
Feb.	55,458	20,869
Mar.	71,698	34,082
Apr.	75,854	40,474
May	75,420	46,736
June	69,708	48,541
July	51,657	33,772
Aug.	*65,000	42,840
Sept.		35,443
Oct.		40,815
Nov.		50,232
Dec.		46,871

*This preliminary figure of sales includes Buick, Cadillac, Chevrolet, Oakland, Oldsmobile passenger and commercial cars and G M C Trucks.

Ohio Association to Conclude Year With Big Convention

The next convention of the Ohio Automotive Trade Association is to be held December 5 to 6, at the Hotel Deshler, Columbus, O., according to an announcement from President Charles B. Rattermann.

While no program has yet been prepared, motor vehicle men of national note will be present to lead in discussions affecting the welfare of the industry. Ohio promises to have her usual interesting and well attended convention. The annual meeting of members will occur at the same time, for the election of officers and trustees as well as the transaction of other business. This is the first annual meeting to be held since the legislative session and reports on new laws still form a very interesting feature.

The convention committee consists of E. C. Brisley, chairman; Warren E. Griffith and C. A. Dunham.

The Ohio association has enjoyed a very pleasing increase in growth and influence during the past year under the leadership of Mr. Rattermann. The worth and activity of the Association is particularly evidenced among the Ohio dealers by the general improvement of business especially the used car situation and by the very marked success of the Association in handling the most important legislation that has ever been passed in Ohio.

The new motor transportation law of Ohio which was successfully substituted by the O. A. T. A. for that offered by the electric railways forms the last word in a state law regulating commercial hauling of freight and passengers over the public highways under the jurisdiction of the state commission.

Reports received in Ohio indicate that the electric men are redoubling their efforts to have legislation prepared by them adopted in other states.

Ten Production Records in Last Few Months

Julius H. Barnes, president of the Chamber of Commerce of the United States, in an address today before the National Association of Insurance Agents, cited ten production records that have been established in industry during the last few months. They are:

The largest pig iron production;
The largest cotton consumption;
The largest steel ingot production;
The largest crude oil production;
The largest automobile and truck production;
The largest residential construction;
The largest production of locomotives;
The largest volume of mail-order sales;
The largest volume of retail sales;
The largest volume of retail car loading.

Maxwell One and a Half Ton Not Increased

A report current during August that the price of the Maxwell 1½-ton truck had been increased has been found false. The list price of the model equipped with solid tires all around remains at $932.

General Motors Traffic Association Now in Operation

To co-ordinate the various traffic problems which confront the many divisions of the General Motors Group, and to develop the policies of General Motors towards railroad questions in general, an organization has been formed of the traffic managers and directors of traffic of General Motors Divisions, subsidiaries and affiliated companies, under the chairmanship of Alfred H. Swayne, vice-president of General Motors. C. A. Sullivan of Fisher Body is secretary. This committee has for its object the general discussion of traffic problems, and the utilization of the individual experience of the members of the association in working out solutions to these problems.

The second meeting of this committee was held Wednesday, August 22 in the General Motors Bldg., Detroit, and bimonthly meetings will follow. At this meeting the chairman appointed the following sub-committees to act as a clearing house for the whole committee; George C. Conn, chairman; C. A. Sullivan, secretary; W. C. LeFebvre; C. R. Scarff and Earle W. Webb (Legal Dept.).

Committee to Investigate the Truck Industry Conditions

A special committee composed of E. A. Williams, chairman; A. S. More; W. A. Kysor; and M. L. Pulcher, has been appointed by the Motor Truck Industries, Inc., to make an investigation of the conditions now existing in the parts distribution and service fields of the motor truck industry with a view to improving these conditions. The committee will report back to the board September 26.

Working with the committee will be the following representatives of parts manufacturers: A. E. Parsons, George W. Yeoman, Fred Glover and C. A. Dana. Though not officially announced it is thought that the annual meeting will be held in Detroit. The date has been set at November 21.

B. G. Appleby

Benjamin G. Appleby, president of the Erd Motors Corp., Saginaw, Mich., died August 14 after an illness of several months. He has been succeeded by W. A. Carrell, who has been elected president, treasurer and general manager. The Erd Motors Corp. has been entirely reorganized with a capitalization of $300,000 and will shortly announce a new complete line of marine, industrial truck and tractor motors in several sizes.

Mr. Carrell, prior to the death of Mr. Appleby, was vice-president and general manager of the concern. He was formerly general manager of the Supreme Motors Corp., and during the past decade has been associated in an executive and engineering capacity with the Wisconsin Motor Co., Beaver Motor Co. and International Harvester Co.

Pierce-Arrow Organizes Finance Corporation

A charter has been granted the Pierce-Arrow Finance Corp., organized under the banking laws of the State of New York. The new corporation with a paid in capital and surplus of $250,000 will engage in the business of purchasing for re-discount notes and acceptances of Pierce-Arrow distributors and their customers given in connection with the distribution of Pierce-Arrow motor vehicles. The entire capital stock of the corporation is owned by the Pierce-Arrow Motor Car Co.

Myron E. Forbes, president of the Pierce-Arrow Motor Car Co., will be president of the Finance Corp. and a member of the board of directors, which will include Walter P. Cooke, Roland L. O'Brien, Lewis G. Harriman, all of Buffalo, and Albert Strauss, of New York.

The management of the corporation will be under the direction of Joseph W. Frazer, vice-president and general manager. Mr. Frazer, a man of wide experience in all phases of automobile time sale finance, comes to the new company from the General Motors Corp., having served several years as an officer of the General Motors Acceptance Corp. Fred R. Bartlett will assist Mr. Frazer as treasurer of the company.

The object of the Pierce-Arrow Finance Corp. is to facilitate the merchandising of the parent company's products not only by placing at the disposal of the distributors and dealers a specialized credit, collection and discount service for handling retail time sales, but by developing a plan whereby new Pierce-Arrow motor vehicles may be financed when carried in stock by the distributor.

Walker Made President of Steinmetz Electric

G. M. Walker, general manager and treasurer of the Steinmetz Electric Motor Car Corp., has been made president of the firm in the reorganization of the personnel which took place in August. The personnel changes were accompanied by a refinancing that is expected to add $300,000 to the working capital of the firm. Plans are now being made for the introduction of a electric passenger car to be manufactured along with the present truck model.

Cox Brothers Join Forces With New Eaton Axle

The new Eaton Axle Spring Co., of Cleveland has added another unit to its plant when it acquired the Cox Brothers Manufacturing Co., manufacturer of Cox bumpers. It is stated that the Cox brothers, William G. and Theo M. will remain in charge of the bumper plants which are located in Albany, N. Y., and Cleveland, Ohio. Factory service branches similar to those existing in New York and Chicago will be installed at Boston, Albany, Cleveland and Philadelphia.

International Conference on Standardization Held in Switzerland

A conference of the secretaries of national industrial standarizing bodies was held in Switzerland; July 3 to 7. Thirteen countries were represented, including all of the more important industrial nations of Europe and America. The sessions were held in Zurich and in Baden.

A leading topic discussed by the conference was the interchange of information between the various bodies during the development of the work in the different countries. At the first conference held in London two years ago. arrangements were made for the systematic interchange of completed work, and to some extent, of information on work in progress. Experience had shown such an early interchange to be extremely important for the work within the different countries from the national viewpoint alone, and quite irrespective of the question of international standardizaton.

While it was not possible to overcome all the difficulties existing by virtue of the important industrial considerations involved, very substantial progress was made. It is believed that the steps taken will lead immediately to a substantially increased amount of interchange of information during the earlier stages of standardization work, and that the way has been paved for a much more extensive interchange in the future.

Provision was made for continuing the work of the conference on the many administrative problems of common interest, through a loose-knit continuing organization. An example of such work planned by the conference is the translation of technical terms of special importance or difficulty in standarization work. There will gradually be built up such a vocabularly of technical terms, mainly in English, French and German, but supplemented as far as may be feasible and necessary by the corresponding terms in other language. Another example is the work undertaken by the conference on the classification and nomenclature of standards.

Body Builders Form Bus Division

Keeping step with the rapid growth of the bus business in the past year, the Automobile Body Builder's Association has formed a bus section with F. E. Cullison, Plymouth Wagon Works, as chairman. The new section has mapped out a number of activities chief of which are the standardization of dimensions and body types, encouraging the purchase of bodies from experienced body makers, and the prevention of impractical features of construction. The formation of a commercial body builders division has been deferred until a meeting sometime near the national shows.

June Was a Good Automobile Export Month

Although the total value of automotive products exported during June decreased slightly, the proportion of motor cars and trucks exported remained at slightly over 8 per cent of the production, according to figures compiled by the Department of Commerce. The total value of automotive exports for June amounted to $15,977,441, as compared to $17,092,041 for May, a decrease of about 6 per cent.

One of the conspicuous features of the month's figures is the increase of about 5 per cent in the value of passenger cars exported, in spite of a slight falling off in the number. While the value of trucks exported declined slightly, this decrease is much less noticable than that of the number exported. The number of cars exported from Canada, however, increased approximately 35 per cent and the value increased only 14 per cent. The increase in number and value of truck exports from Canada was approximately 42 and 44 per cent, respectively. The large increase in the Canadian exports can be explained by the fact that exports to Australia, Great Britain, and New Zealand markets, which take principally Canadian made cars, have shown the greatest growth.

An important decrease occured in the value and number of engines for cars and trucks which were exported during June, as compared with May. The June exports amounted to only about 50 per cent of the previous month. There was also a decrease in the value of parts and accessories, exclusive of tires, amounting to nearly 17 per cent. The decreases in these two items account in a large measure for the falling off in the total value of automotive exports which occurred during June.

Portable Salesman Sells Service Equipment

(*Continued from page 64*)

in a signature on the dotted line," said one of the firm. "The shops in the small places cannot be interested in a piece of equipment that cost any money by the catalog or blue print plan. These men know equipment when they see it operated. Our sales have been very satisfactory and the cost of the truck, body and expense of operating is less than selling by the conventional methods, and, we are selling. In a number of instances we have demonstrated and have not sold the first time, but many of these have bought later. The charge of $10 per demonstration offsets much of the expense."

The travelling thus far has been confined to Connecticut, and this State will be thoroughly combed first. It is the intention of Knight & Thim to travel in the South this winter with the truck.

Personal Items

W. H. Bramman, formerly sales manager of the Universal Machine Co., has been made general manager of the Motor Parts Corp., 1419 N. Charles St., Baltimore, Md.

Charles C. Bulkeley, executive secretary of the Philadelphia Automobile Trade Association is severing his connections to take charge of the advertising department of J. H. McCullough & Sons, large parts dealers of Philadelphia. While with the Association, Mr. Bulkeley has been responsible for a number of important achievements, noteably that of the Sales Manager Division.

E. G. Christensen, sales manager of the Carl Pick Co., manufacturer of universal joints and propeller shafts, has been promoted to the office of vice-president. Mr. Christensen will maintain his Chicago office at 732 Sherman St.

H. H. Doering has resigned as sales manager and a member of the board of directors of Rauch & Lang, Inc., Chicopee Falls, Mass., and is taking a rest for the balance of the summer. He will resume activities in the automotive industry, October 1.

W. E. Fenn, formerly secretary of the National Automobile Chamber of Commerce and well known throughout the motor truck field, has joined the sales organization of Service Motors, Inc., Wabash, Ind. He will take charge of the Service interests in the Harrisburg, Pa., territory.

H. DeLong Fry has been announced as general sales manager of the Apollo Magneto Corp., of New York and Kingston. Mr. Fry is an SAE member and has been identified with the automobile and accessory business since 1905. His headquarters will be at Kingston.

A. H. Gits, well known Oak Park manufacturer and member of the firm of Gits Brothers Mfg. Co., of Chicago., was recently killed at Eestes Park, Colo.

H. H. Hill has been appointed Pacific Coast manager of the Norwalk Tire & Rubber Co. He is well known in the Coast section having been connected with the Norwalk company for the past seven years.

H. R. Hyman, well known through the automotive industry, has been advanced to the position of head of the sales and advertising departments of the Stutz Motor Car Co., of America, Inc., Indianapolis. Walter P. Hanson has joined Stutz as advertising manager.

E. J. Kilbourn has been announced as district sales manager of the middle western states of the General Motors Truck Co. He will continue as manager of the Chicago branch and with his added duties will be assisted by Allen Granger.

Philip C. Lewis formerly of the Herold-Garber Co., Indianapolis, is now with the Oaks Co., Indianapolis in the sales and advertising department. He will specialize in the accessory business.

W. P. Loveless for nearly four years associated with W. R. Johnson Mfg. Co., is now with John C. Hoof & Co., in charge of sales and advertising in the manufacturing division.

J. E. Padgett, formerly sales engineer of the Weidely Motors Co., and vice-president of the Carburetor and Accessories Co., of Indianapolis, is now with the Beneke & Knopf Manufacturing Co., Rayfield carburetor manufacturers, as sales engineer with offices at 1401 David Whitney Bldg., Detroit.

John W. Peterson, president and treasurer of the Richardson-Phenix Co., Milwaukee, manufacturer of lubricating devices, oil filters, etc., which is now a division of S. F. Bowser & Co., Fort Wayne, Ind., died July 24 following an operation for ulcer of the stomach. He was 47 years old.

Robert E. Pye, sales manager of Stevens & Co., 375 Broadway, New York, manufacturer of automotive equipment and Stevens speed-up tools, has resigned to enter business for himself. His successor will be announced shortly.

R. M. Taylor, who at one time was with the Traffic Motor Truck Co., and more recently with Fisher Body at St. Louis, is supervisor of purchases and director of materials for Durant's new Flint Six, being made at Flint, Mich.

Trade Changes

The United States Electrical Tool Co., has opened an office in Toledo at 110 11th St., J. E. Hauser has been appointed district manager.

The White Motor Truck Sales Co., at Detroit is now installed in larger quarters at East Grand Blvd., and Helen Ave., having formerly been at 4437 Woodward Ave. The new home, which is up to date in every respect will afford 25,000 sq. ft. of floor space.

The Atlanta (Ga.) Retail Battery Association has affiliated with the Atlanta Automobile Association and is to be conducted as a separate department of the mother association.

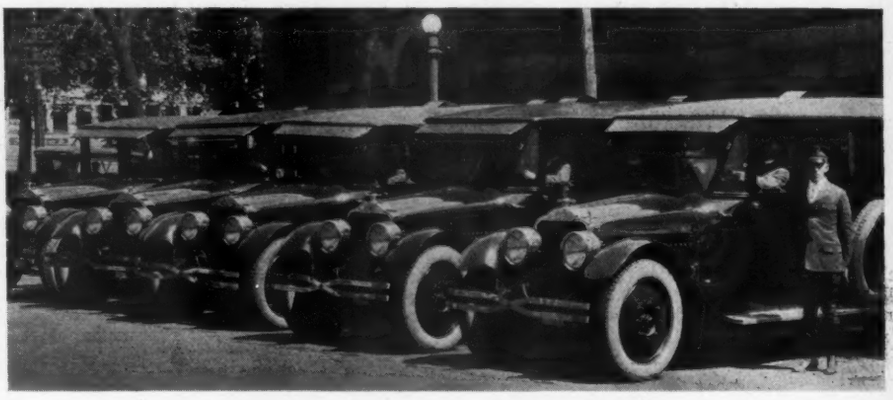
The Automotive Utilities Corp., manufacturer of Trail-Fords and steel dump bodies has purchased a $100,000 plant in Ann Arbor, Mich., that will permit production to be started shortly. It was recently reported that the company was to buy land in Mt. Clemens, Mich., but this proposition has been abandoned because of the time which would be required to build a plant.

The Mayer-Lenz Co., Ford dealer of Water, Wis., has been purchased by A. M. Baily. The new firm will be known as the A. M. Baily Co.

The Fahrig Metal Co., manufacturer of Fahrig anti-friction metal is now located at a new address, 26 Renwick St., New York with new equipment and improved facilities.

The M. B. Automotive Corp., Nashville, Tenn., has started to work on remodeling the ten factory buildings obtained by the company which was recently incorporated in Delaware. The company will make motor buses, trucks and kindred products.

The Walter Motor Truck Co., Inc., builder of electric trucks and four-wheel drive tractors is now in its new factory at Queens Blvd., and Hulst St., Long Island City, N. Y.



Showing the New Cox Bumpers for Motor Buses

They are mounted on a fleet of Pennsylvania-Ohio motor buses operated by the Pennsylvania-Ohio Electric Co., Youngstown, Ohio. These buses are Whites equipped with Bender de luxe bodies and model 19 Cox bumpers, front and rear.

Gramm-Bernstein Provides Wholesale Grocers and Millers With a Special Job

This job of which the Gramm-Bernstein Motor Truck Co., Lima, Mich., has already put out quite a number is mounted on a Model 30 or 40 chassis capable of handling loads of 7000 and 10,000 lb., respectively, at a road speed of 20 m. p. h. The side sliding doors operate on rollers and can be locked on the interior. Stakes are provided for open-door operation. Other features are the armored glass side panels and a screen sliding door between the driver's seat and the body. The driver's seat accomodates four comfortably.

What the M. A. M. A. is Doing for the Industry

A Brief Outline of the Activities of This Organization. Credit Department Proves Very Beneficial to Members

By C. S. PERRIE

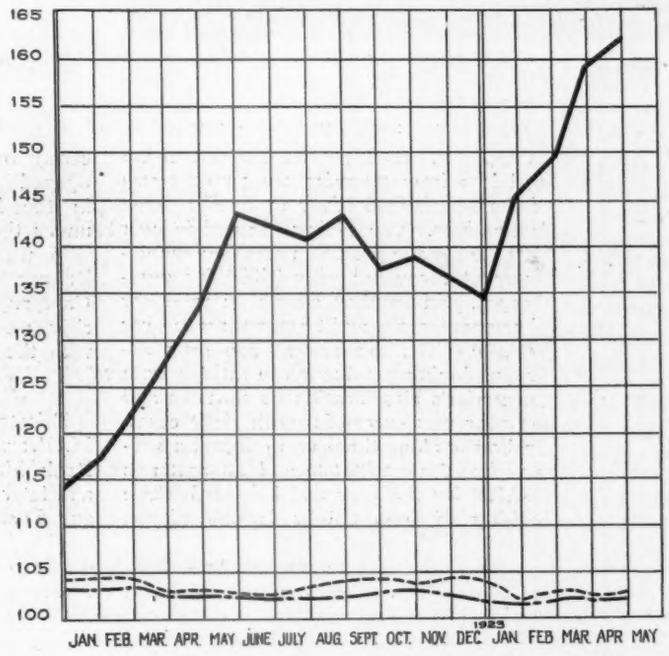
At the completion of the first six months of 1923 the automobile industry asked, "What is the outlook for the last six months?" Production figures, general business and retail sales all reflected an era of unusual prosperity. The reports on trade conditions by the various organizations in the industry indicated that the last half of the year would be proportionately prosperous.

But production does not always spell real prosperity, for there is the factor of credits to be reckoned with. It will be recalled that from January to May, 1922, that the curve indicating purchases of parts, units, equipment, etc., by the industry showed a rise from 115 to 143 and in the last six months declined to 135. From January to May, 1923, the curve shot upward to 160. Some decline, seasonal, may be expected during the balance of the year, but whether the same ratio of decline will be reflected as in 1922 cannot be accurately determined until 1924 is ushered in.

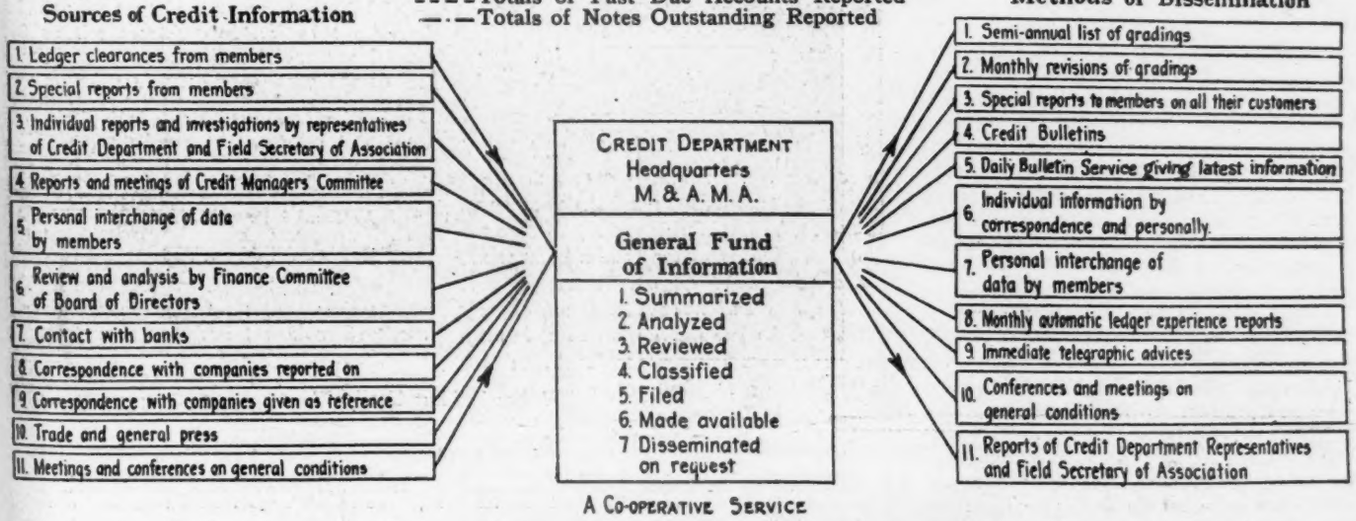
That the industry is prepared to meet any decline is indicated by the accompanying graph curves indicating the totals of past due accounts and totals of outstanding notes reported by the Motor and Accessory Manufacturers Association whose 400 odd members supply the bulk of parts, units, equipment, etc., to the industry. As may be noted the items referred to run steadily between 101 and 104, proving, that despite the enormous increase in the purchase curve a very healthy credit condition exists. It also indicates that the industry is prepared to discount any abrupt decline in purchase.

An outstanding feature of the industry for the year is the exercising of more care than heretofore in watching the credits. Despite the prosperity the manufacturer is exercising greater caution. That manufacturers are keeping in closer touch with their markets and require actual facts and figures upon which to base their decisions is indicated by the volume of reports issued by the credit department of the Motor and Accesory Manufacturers Association in 1922. It cleared 231,036 inquiries and issued 261,878 tissue reports, made 8755 special reports which ran from 2 to 40 pages of closely typewritten matter. The records of the credit department thus far exceed those of a similar period last year indicating that the members are giving closer attention to the matter of credits.

The extent and detail of the credit service is indicated by an accompanying chart. In addition there is supplied upon request a detailed statement with all available data as to the account or company. The prospect is also asked to supply a financial statement. With data furnished by the members on an account, plus the information



——Purchase of Parts, Units, Equipment, Etc., by Automobile Passenger Car and Motor Truck Makers From 300 Parts and Accessory Manufacturers by Months.
- - - -Totals of Past Due Accounts Reported
—·—Totals of Notes Outstanding Reported


Sources of Credit Information
1. Ledger clearances from members
2. Special reports from members
3. Individual reports and investigations by representatives of Credit Department and Field Secretary of Association
4. Reports and meetings of Credit Managers Committee
5. Personal interchange of data by members
6. Review and analysis by Finance Committee of Board of Directors
7. Contact with banks
8. Correspondence with companies reported on
9. Correspondence with companies given as reference
10. Trade and general press
11. Meetings and conferences on general conditions
CREDIT DEPARTMENT
Headquarters
M. & A. M. A.
General Fund of Information
1. Summarized
2. Analyzed
3. Reviewed
4. Classified
5. Filed
6. Made available
7 Disseminated on request
Methods of Dissemination
1. Semi-annual list of gradings
2. Monthly revisions of gradings
3. Special reports to members on all their customers
4. Credit Bulletins
5. Daily Bulletin Service giving latest information
6. Individual information by correspondence and personally
7. Personal interchange of data by members
8. Monthly automatic ledger experience reports
9. Immediate telegraphic advices
10. Conferences and meetings on general conditions
11. Reports of Credit Department Representatives and Field Secretary of Association
A CO-OPERATIVE SERVICE

Outline of the Credit Department's Service

General Offices of the M. A. M. A.

prepared by the credit department, a very accurate credit report is possible.

The tissue reports enable a member to note quickly actual conditions, giving data on method of payment by months over a period of a year, condition of account monthly, including amount of purchases, payments, notes, etc. There is a special report, very comprehensive, which supplies intimate details of an account. With these and regular reports, daily bulletin service and a special Red Tip bulletin service actual facts are in the possession of the member and his credit manager, thereby enabling him to anticipate to a great extent business conditions. One of the features of these reports is the exchange of member information. The system is such that there can be no reflex action from the confidential information.

Among the many activities of the credit department is the special reports supplied members on jobbers, dealers and parts manufacturers. The data supplied by the members dealing with the subject company is compiled, but names are omitted. The report by the subject company is also incorporated, also its financial statement. This data is supplemented by the information by the credit department. The value of such credit information to a member, especially a new account, is obvious. In connection with the credits of car and truck manufacturers, jobbers, etc., there is a credit grading which is corrected monthly. The credit committee is composed of non-competitive members and a careful and detailed analysis of the subject company is made and a report supplied to each group, although established last December has been very beneficial to the members, particularly to these who sell products to the jobber.

Through efforts of the Traffic Department reductions on transportation charges on units, parts, etc., have been obtained which has been beneficial to all concerned. Among many accomplishments of the department was a reduction in freight rates by the Trans-Continental lines on all types of wheels, when shipped in car load lots from manufacturing points east of the Mississippi River to Pacific Coast destinations. The saving effected is over $100,000 for the year. In addition the department recovered over $5000 for overcharges, and handled claims on rates for 67 companies, the audit amounting to over $900,000. The department has been active in obtaining reduction in ratings from the carrier's classification committees and last year was successful with eight cases. On bodies alone there was effected a saving of at least $500,000 and on batteries $150,000 for the year will be saved. The auditing of freight bills is one of the features of the department.

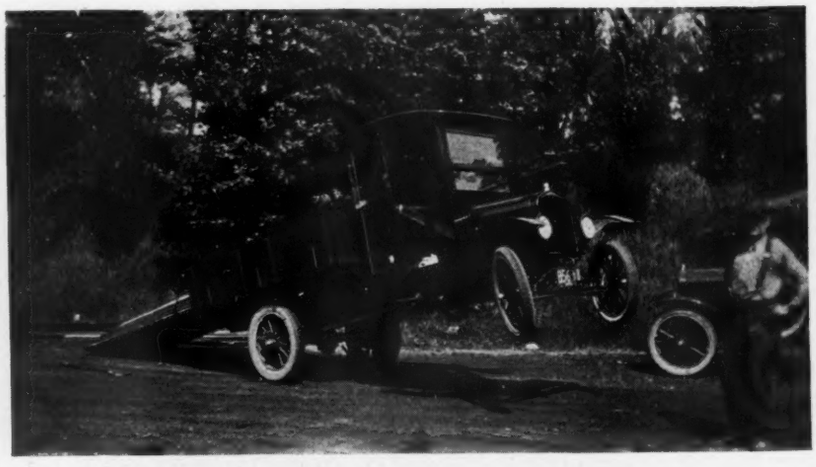
Among the other departments is that on shows. It obtains desirable space at the National exhibitions for the members and as well attends to all details. The educational department chronicles the data gathered by the association on business trends, etc., as well as issues timely news to the trade. The Motor and Accessory Manufacturers Association includes in its activities an advertising managers council, legislative, good roads and standardization departments.

The association was organized March 2, 1904 with 39 members, which today number well over 400, including the representative manufacturers of units, parts, equipment, etc., of the country. Last year the companies affiliated distributed over $600,000,000 in parts and accessories which amount will be greatly exceed in 1923. The sales and credits of this organization reflect conditions in the industry and, as early pointed out in this article, a healthy condition and preparedness for any possible abrupt decline in purchase.

General Accessories Open Detroit Offices

General Accessories Co., of Pontiac, recently organized by Frank Briscoe, has opened its Detroit sales and financial office in the Book Building. The sales are under the charge of Mr. James Holihan, who was for years connected with Mr. Briscoe in the Briscoe Manufacturing Company. The financial department is in charge of Sid Essrig, formerly connected with the Durant activities.

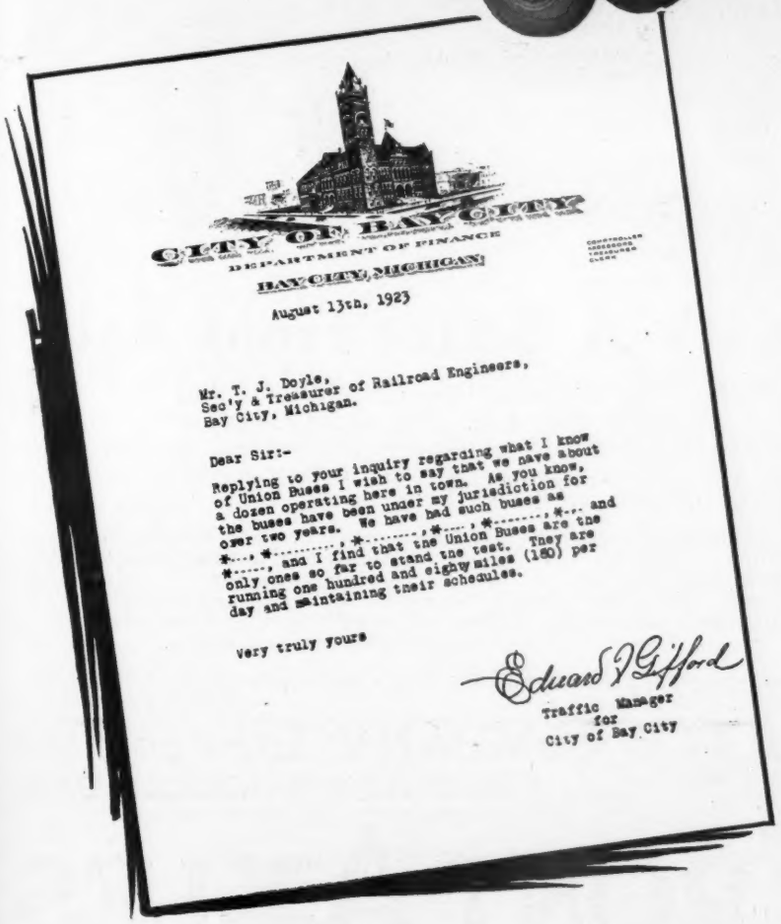
Efforts are being made to find Albert M. Pearson, at one time president of the Rush Motor Truck Co., of Philadelphia and later with Packard, Gramm-Bernstein and Denby as salesman. Mr. Pearson's mother has asked J. H. Malone, vice-president of the Hudson Motor Specialties Co., of Phildelphia to locate her son.



"Where is That Trailer?"

Not the effect of bootleg gasoline, but the effect of being unwisely loaded. At that it was only a ton and a quarter they were trying to make her carry. The picture suggests the advantage of using trailers in hauling long material. The little truck could easily have pulled three times as much on a trailer, and never felt the weight of it. It illustrates a common fault in motor transportation—too much weight back of the rear axle. If there had been another pair of wheels to support the back end, in other words a semi-trailer, twice as much again could have been added to the load.

The Survival of the Fittest



CITY OF BAY CITY
DEPARTMENT OF FINANCE
BAY CITY, MICHIGAN

August 13th, 1923

Mr. T. J. Doyle,
Sec'y & Treasurer of Railroad Engineers,
Bay City, Michigan.

Dear Sir:-

Replying to your inquiry regarding what I know of Union Buses I wish to say that we have about a dozen operating here in town. As you know, the buses have been under my jurisdiction for over two years. We have had such buses as *..., *....., *....., *....., *..., *..... and *....., and I find that the Union Buses are the only ones so far to stand the test. They are running one hundred and eighty miles (180) per day and maintaining their schedules.

Very truly yours

Edward P. Gifford
Traffic Manager
for
City of Bay City

Dealers: Read the Evidence

Bay City, Michigan, tried out seven well-known makes of buses—and discarded them all. They could not pass the acid test of rigorous bus service.

Union Buses *have*—over a strenuous two-year period. They do nine to ten miles and better on a gallon of gasoline. They average 180 miles per day—and maintain their schedules.

And they make money on a five-cent fare.

How would *you* like to handle such a desirable line of buses—and equally dependable trucks?

***Seven Well-Known Bus Makes**
Names Furnished Upon Request

Union Motor Truck Co.
Bay City, Mich.

UNION TRUCKS

MOTOR TRUCKS AND BUSES

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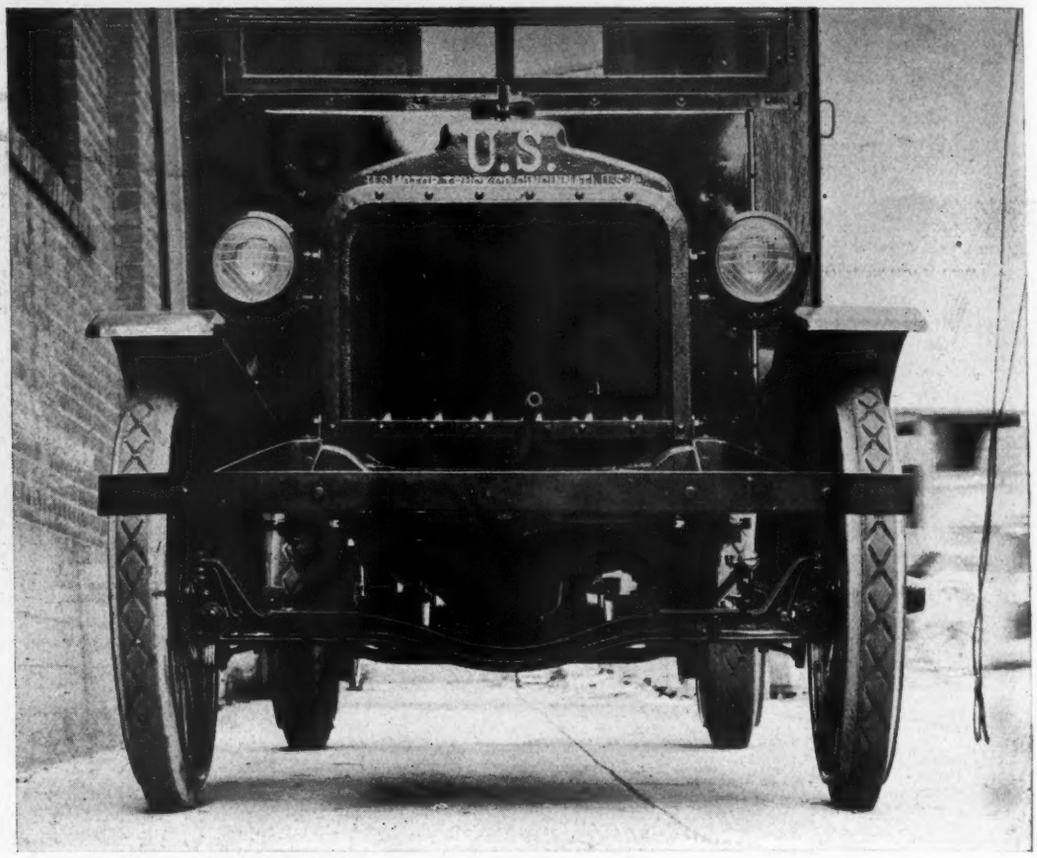

Front view of U.S. Motor Truck, Model NW 23, with bus body, showing standard installation of Shuler Front Axle, Model 350.

"Because It's A Better Front Axle"

THE United States Motor Truck Company, Cincinnati, Ohio, is using Shuler Front Axles on three different models. They have found, as have many other manufacturers (among them some of the leaders in the industry), that we are producing an axle that will *stand up under any emergency*, that will give the highest degree of *efficiency* in operation, that will not fail either in *safety* or *service.*

This is only the logical result of concentration on one product. We have turned all the energies of our experienced engineers and efficient mechanics upon the perfection of this one major unit. The Shuler Front Axle should be—as it is—*a distinctly superior front axle.*

Correspondence is invited from manufacturers who are disposed to give the front axle the careful consideration that its importance demands. Our engineers are at your service to develop the greatest possible efficiency in the particular Shuler Front Axle which will best meet your special requirements.

We will be pleased to furnish any special information on request.

SHULER AXLE COMPANY, Incorporated
3003 JONES STREET LOUISVILLE, KENTUCKY, U.S.A.

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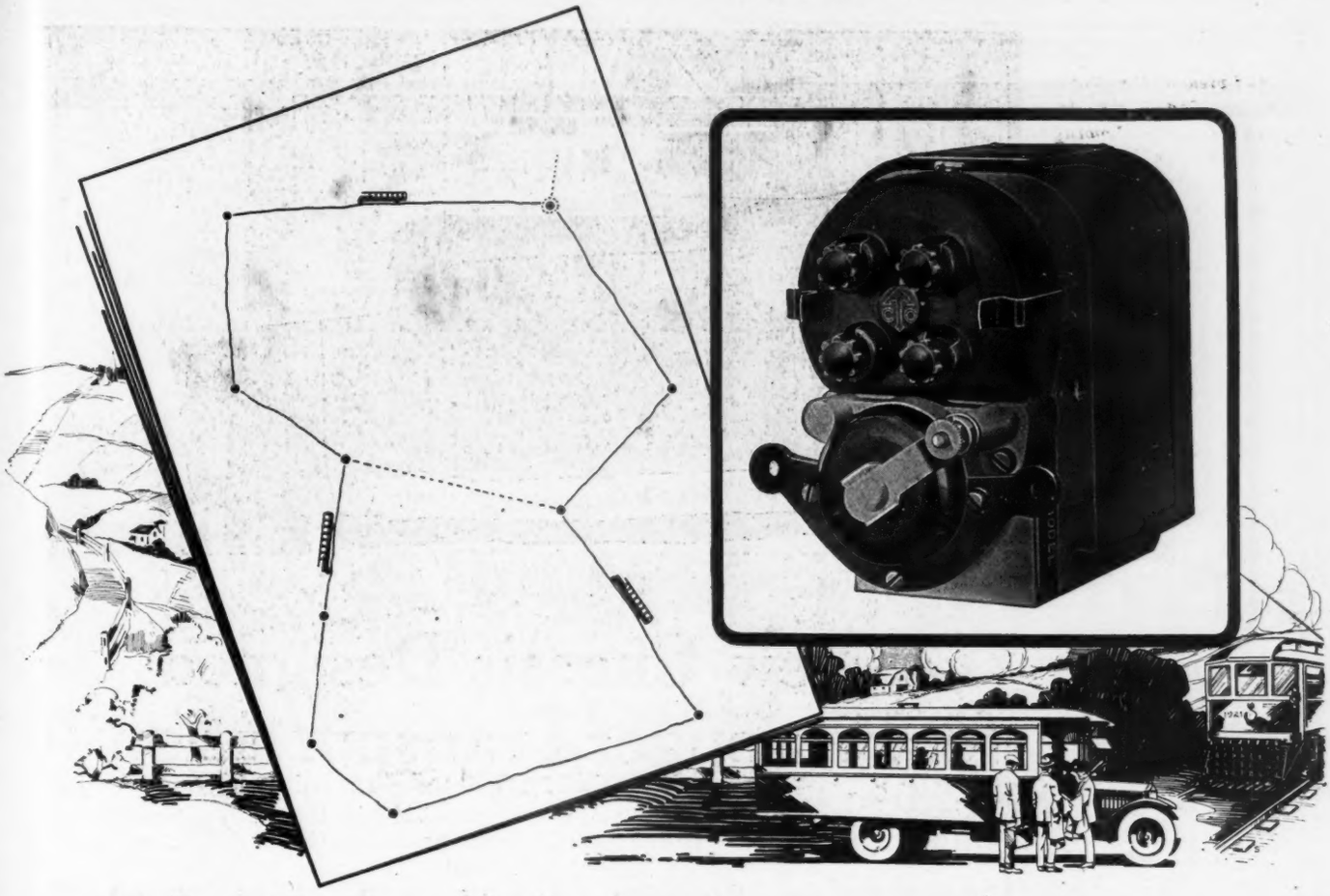

Motorbuses That Are *Teagle* Equipped Maintain Their Schedules

In no other form of truck transportation does the winning of confidence in a company's ability to maintain schedules contribute so materially to success.

A big factor in keeping buses on schedule is quick, certain starting, and freedom from ignition trouble. You can insure this and help operators keep their buses on time by installing Teagle Magnetos on the buses you sell.

The Teagle is the ideal motor bus magneto.

It is strong, simple, trouble-proof, built for the hardest truck service.

It is absolutely watertight and will operate in drenching rain.

Dust cannot get into it to disturb its operation.

It gives a hot spark at all speeds, insuring combustion with low-grade fuels.

The Teagle Impulse Starter equipment gives *easy starting, every time,* in the coldest weather.

It is certain that the use of Teagle Magnetos will make your motor bus models better schedule keepers. You can't afford to neglect anything that will contribute to that end. Write us today about Teagle.

The Teagle Co., Cleveland, Ohio

TEAGLE

"The Simplest Magneto of Them All"

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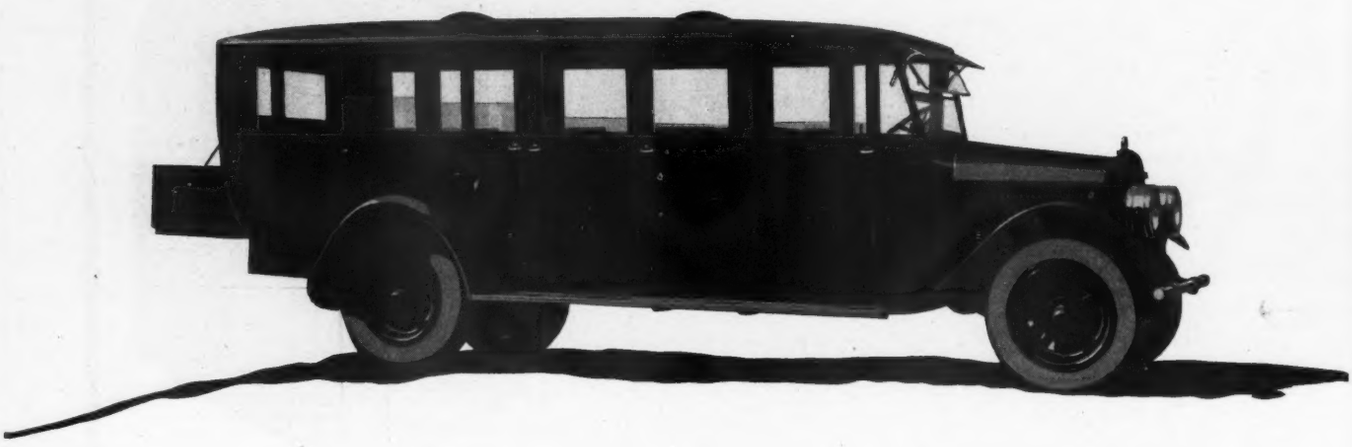

A New Chassis Designed for Passenger Transportation

STEP on the accelerator, and you will be astonished by the quick get-away that is made possible by the special transmission. All the speed you want —from 25 to 40 miles per hour with full load. The entire unit is built low for safety and easy entrance and exit. Long wheelbase and long wide flat springs make riding easy. The heavy frame protects the body. The engine is a counterbalanced high-speed type that has been proven by millions of miles of successful use.

A complete truck line: 1½, 2, 3, 4 and 6 ton capacities and the Service 25—a heavy duty job geared for high speed work.

In every way this Service passenger unit has been designed to meet the requirements of the service for which it is intended.

Dealers: You need a chassis like this in your line. The field is big and constantly growing. This unit is backed by the nation-wide Service reputation for low operating and maintenance costs.

Write for all the facts

SERVICE MOTORS, INCORPORATED
Wabash, Indiana

Service MOTOR TRUCKS
Scientifically Cushioned

With the Red Pyramid **on the Radiator**

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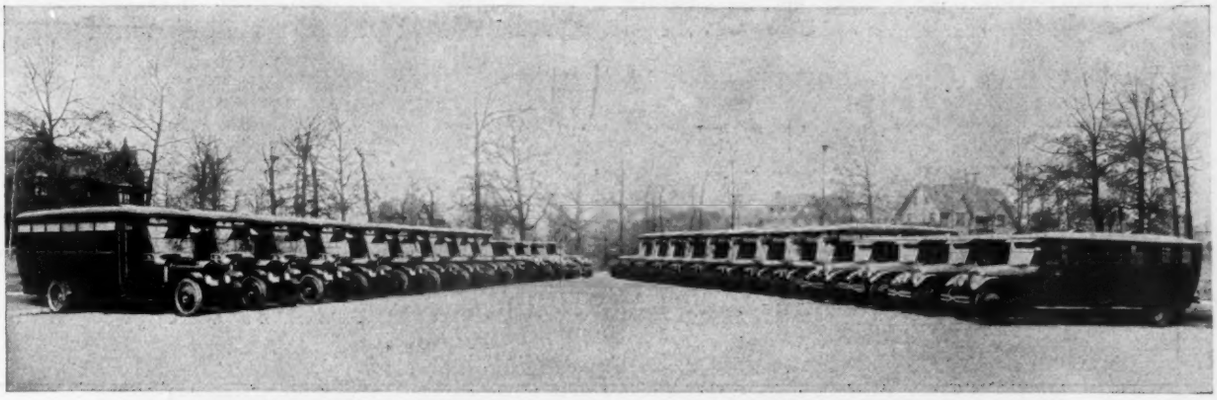

This splendid fleet of motor busses in the service of the Pennsylvania-Ohio Electric Company is equipped with "Perfection" bus springs

Not Price—but Service

THE margins on which springs are bought today are very close, and a few cents' difference in price may count heavily. Fully conscious of that fact as we are, we will not lower our standards to cut off those few cents. Springs are too important a unit in a bus or truck to be built on price alone. If you want good springs, look for "Perfection." They are built for long and strenuous service.

The EATON AXLE & SPRING COMPANY
PERFECTION SPRING DIVISION
CLEVELAND

PERFECTION SPRINGS

An EATON PRODUCT

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FREE

to Motor Truck Manufacturers

The care and handling of wood wheels after they are received by the truck manufacturer affects their subsequent performance.

In order that you may get greater service out of your wheels thru properly handling them until they are placed under your trucks, we have published this instruction card that will be sent you on request.

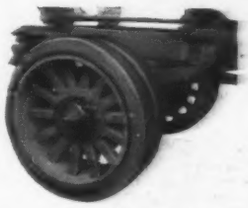
Hang This INSTRUCTION SHEET in Your Factory

Instructions for Care of Wood Automobile Wheels After Received by Truck Manufacturer

In building automobile wheels we use woodstock which is thoroughly dry, and apply one coat of lead and oil primer as a partial protection while wheels are being delivered to our customer.

Upon receipt of the wheels the customer should IMMEDIATELY give them one or more additional good coats of paint. This will keep the dry wood from absorbing from the air more moisture, swelling and taking a permanent compression only to dry out later and make a loose wheel.

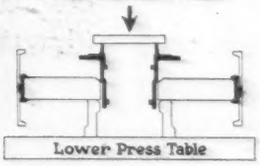
Wheels should be stored in a room in which there is a little artificial heat at all times.



Our 36x7 Dual S. A. E. Metal Felloe Truck Wheel

HUB APPLICATION

Bring Pressure Against This Surface Plate



1st. PAINT THE CENTER HOLE OF THE WHEEL WITH WHITE LEAD.
This lubricates the surface while the hub is being pressed in and later, when drying, acts as a binder.

2nd. PLACE THE WHEEL ON A CUP ON A PRESS TABLE.
The cup center should be a trifle larger than the hub barrel diameter.

3rd. PLACE THE HUB IN THE WHEEL SO THAT THE BOLT HOLES ARE DIRECTLY OVER THE CENTER OF THE SPOKES.
This is particularly important in our Metal Felloe Truck Wheels, so that the wedge in the spoke miters will not be cut in two. (See illustration above.)

4th. LAY A FLAT PLATE ON THE HUB AND BRING PRESSURE TO BEAR ON THE SAME, WHICH WILL SEAT THE HUB IN THE WHEEL.
In building wheels we aim to make our hub holes about 1-64" smaller than the hub barrel so it will make a TIGHT PRESSED FIT. Any hub which does not have to be pressed in will not give good service and the wheel should not be used.

5th. BORE THE HUB BOLT HOLES.
Using the bolt holes in the hub as a guide, bore a hub bolt hole through one spoke and the rest of the holes about half way through. Put the loose flange on the wheel and fasten with one bolt. Turn the wheel over and bore the rest of the holes from the other side of the wheel, allowing the drill to go through the spokes. This will allow the bolts to follow through without stripping the threads.

6th. TIGHTEN AND RIVET THE BOLTS.
After a nut has been screwed tight, tap the head of the bolt with a hammer to make sure that the bolt is properly seated; then tighten the nut again and rivet over the nut end of the bolt.

1867 **Hoopes, Bro. & Darlington, Inc.** 1923
WEST CHESTER, PA.

SEND FOR YOUR COPY NOW

The HOOPES METAL FELLOE WHEEL

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Heil Hydro Hoists

Service Through Quality

"Our Hydro Hoists Lift Any Load"

The Alwarts Brothers Coal Co. of Chicago has a fleet of Heil-equipped coal trucks. Their letter, part of which is quoted, is written from actual first-hand experience.

"Our Hydro Hoists lift any load. They never fail us. We never worry about their upkeep. They don't need to be looked after. Heil equipment has proved that it pays to specify quality and we are surely going to buy your coal dump bodies and Hydro Hoists when we are in the market again."

"Hydro Hoists Work Effectively"

Charles P. Thompson, president of the Calumet Coal Co., Chicago, is mighty enthusiastic about the 10 cu. yard Heil Body and Hydro Hoist mounted on the truck shown in the picture. This is what he says about them:

"The fact that these hoists are mounted under the body, thus allowing the body to fit close to the cab, is a considerable advantage. The hoists work effectively, and we are well pleased with them."

"Increase Deliveries 40%"

The Atlas Coal Co., Louisville, Kentucky, has an entire fleet of Heil-equipped coal trucks. Read the words of Charles T. Crush, president of this enterprising Louisville firm:

"The Hydro Hoists on all our trucks are working perfectly and we can now increase our deliveries more than 40%, by having the Hydros and discarding all hand hoists. We would not be without Hydros on our trucks."

Write to Heil About It—Today!

The Heil Co. manufactures steel dump bodies and Hydro Hoists for every purpose, to be mounted on any make or model motor truck. Distributors all over the United States insure efficient and prompt service. Heil also builds a complete line of bodies and hand hoists for mounting on one-ton trucks. Electrically welded compartment truck tanks, storage tanks, pressure tanks, etc. Special line of bodies, hoists and tanks for the Ford truck. Literature and prices furnished on request. Dealers, write for special proposition.

THE HEIL CO.

1143 Montana Avenue, Milwaukee, Wisconsin

DISTRIBUTORS

The Heil Co., Chicago, Ill.
The Heil Northwestern Sales Co., St. Paul, Minn.
The McKenna Co., Cleveland, Ohio
The Mayer Body Corp., Pittsburgh, Pa.
General Auto Truck Co., Washington, D. C.
The Heil Co., 26th and Parrish Sts., Philadelphia, Pa.

Quality TANKS BODIES & HOISTS "Made by Heil"

DISTRIBUTORS

Steffen-Van Steenwyck Co., Sioux City, Iowa
Standard Parts Corp., Richmond, Va.
Motive Parts Corp., New York City
Modern Vehicle Co., San Francisco, Cal.
H. P. Wilson Co., Denver, Colo.
Bacon-Matheson Forge Co., Seattle, Wash.
Engineering Equipment Co., Lansing, Michigan

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The Prime Factor in Service—MEN

If any part of the car requires the attention of an expert, when in need of adjustment or repair, it is the starting, lighting and ignition equipment. The tinkerer here can easily do more harm than good.

You will find *trained men* at all of the more than 350 Westinghouse Service Stations. Each has been trained in the Westinghouse plant or by Westinghouse experts, several of whom are always on the road, inspecting service stations and making sure they are giving the kind of service demanded by Westinghouse standards.

No matter what the emergency, Westinghouse Service Station men are fully equipped to take care of it promptly and properly.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
Automotive Equipment Department - Sales and Service Headquarters: 82 Worthington Street, Springfield, Mass.

Westinghouse

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Foreword

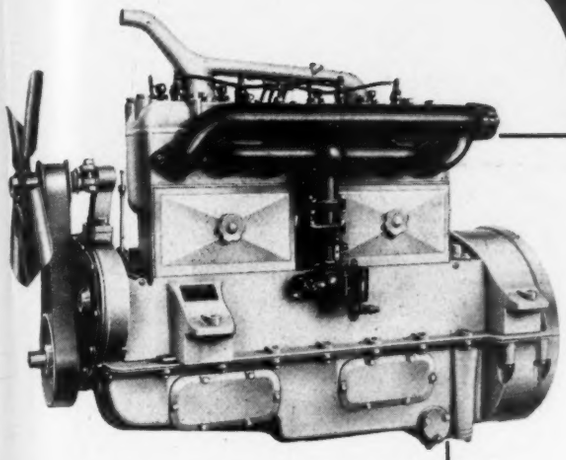
THE MAN who invests in a STANDARD MOTOR TRUCK Dealership eliminates the speculative factor in truck selling. He sells the acknowledged leader in the specialized truck field. His investment is safeguarded by the powerful resources of the STANDARD MOTOR TRUCK COMPANY. His selling efforts are reinforced by sustained factory cooperation that insures profitable, permanent success for himself.

Standard

DETROIT USA

"TRUSTWORTHY"

The ONLY kind of an engine you can afford to have in large trucks



Model KU
ENGINE SPECIFICATIONS

Four cylinder vertical L-head type
Bore 5 inches, stroke 6½ inches
Piston displacement, 501.04 cubic inches
R.P.M., 800 Normal; 1100 Maximum
Weight, Model KU, 1150 lbs.
Horse Power { 25 to 55 on gasoline / 20 to 45 on kerosen

Model KL

Equipped with starting and lighting units and is arranged for 3 point suspension when mounted in the frame. Especially suitable power plant for motor buses.

THE C. & C. HAULAGE COMPANY
DUMP TRUCK HAULING
AND STEAM SHOVEL WORK
330 DUBLIN AVENUE
COLUMBUS, OHIO

October 17, 1922.

Climax Engineering Co.,
Clinton, Iowa.

Dear Sir:-

In regard to the motor we bought from you in March 1921. This motor we are overhauling now and find it in very good condition.

The blocks are as good as new and they do not show the wear as much as other blocks do in the same length of time. These blocks are worn about 1 to 2 thousandths of an inch, while blocks ffom other motors which are replaced by Climax, would be worn about 10 to 15 thousandths of an inch. The bearings were taken up three times since we had the motor and the valves were ground three times. The other parts of the motor are in good condition. We do not have a bit of trouble with it.

We had the motor in the heaviest pull we could find on roads that were soft and in cellars that were 15 to 20 feet deep. So you can see that is a good incline to come up with a full load of 7 ton. We have installed three more motors because they are so satisfactory.

Yours very truly,
THE C. & C. HAULAGE CO.
Wm. Klopp.

Write for Catalog

CLIMAX ENGINEERING COMPANY
29 West 18th Avenue
Clinton, Iowa

Builders of

CLIMAX

"The Trustworthy Engine"

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

The Tire of Traction

Note the big rubber cogs and curl groove of the Goodrich Tractor Type Truck Tire—the newest development in a solid tire.

Your eye sees at once how they dig into soft going, and stop a sliding truck on a slippery pavement.

Here is a traction tread that lasts the whole life of the tire.

Here is the tire built to give maximum service for heavy duty trucking and long hauling.

Its performance has already outstripped the splendid service forecasted for it.

The problem of the hour is to reduce the cost of distribution. This tire does it.

We invite you to call on a Goodrich Truck Tire Distributor, and examine the exceptional features of this tire.

THE B. F. GOODRICH RUBBER COMPANY

"Best in the Long Run"

Goodrich

Tractor Type TRUCK TIRE

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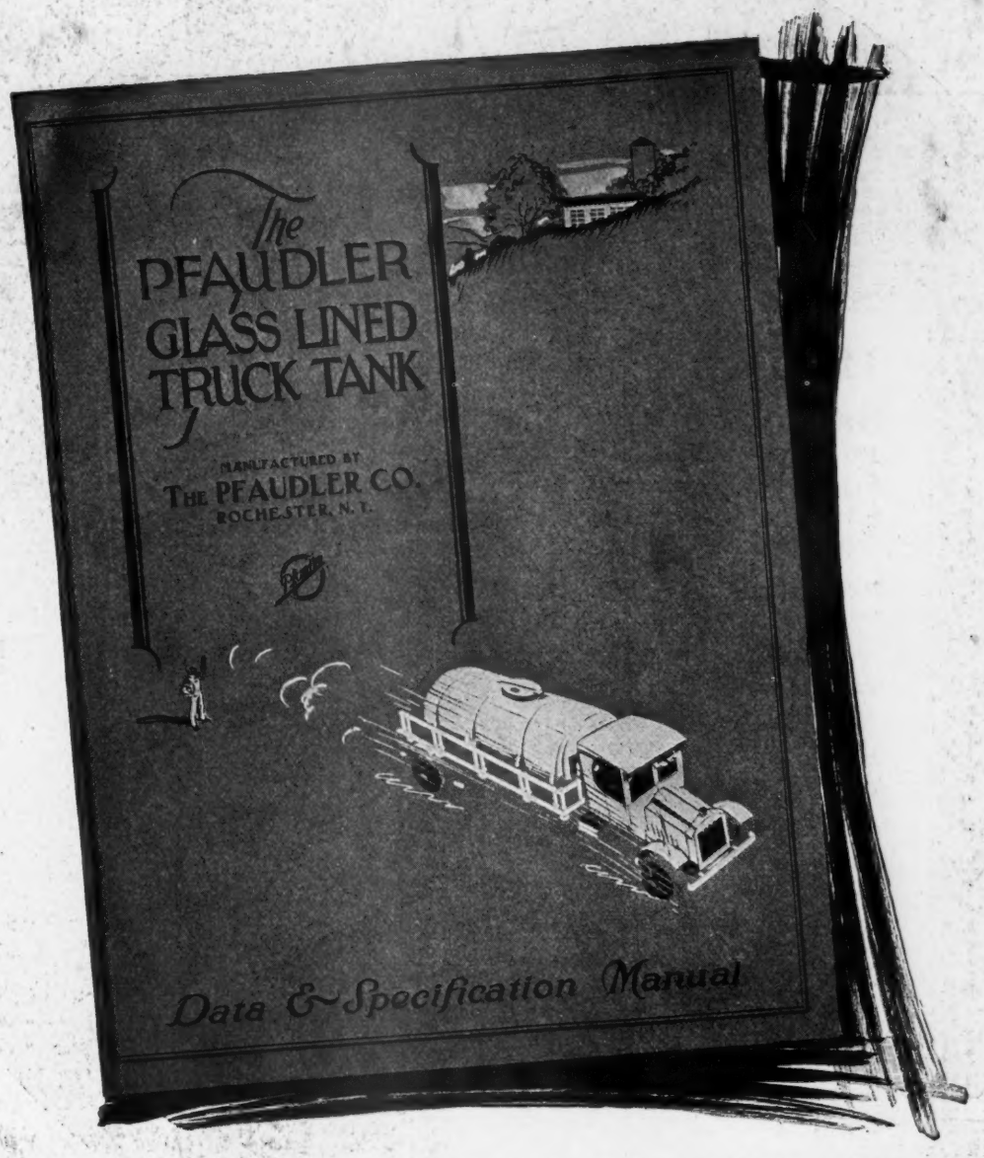


GET A COPY OF THIS MANUAL!

Selling trucks has become a specialized service of adapting the truck to the particular work it will do.

If you have any dairy prospects on your list, why not try to sell them a truck equipped with a glass-lined truck tank? You will thus be offering a specialized service.

The Pfaudler Glass Lined Truck Tank saves the dairymen the expense of a high can investment and depreciation, the cost of can handling, can washing machinery, etc.—and it is the most sanitary medium of transportation yet devised for the hauling of milk.

The complete story is told in the above illustrated manual. Send for it today and let us tell you about our attractive commission offer.

THE PFAUDLER COMPANY ROCHESTER, N. Y.

Makers of Glass Lined Steel Truck Tanks *Branches in Main Centers*

TEAR OFF AND MAIL

The Pfaudler Company
Rochester, N. Y.

You may send me your new Truck Tank Data and Specification Manual, explaining your commission arrangement. No obligation.

Firm Name .....
Address .....
Individual .....
Truck Handled ..... (CCJ 9-23)

Consistent Performance

Dayton Steel Wheels are built for Strength, Light Weight, Tire Economy, Durability and Appearance.

That Dayton Steel Wheels do all that is claimed for them is proved conclusively by the fact that they are standard equipment on nearly all the leading trucks.

Dayton Steel Wheels Help Make Sales
Specify Them on Your Next Order

The Dayton Steel Foundry Co.
Main Office and Works **Dayton, Ohio**

Dayton
Steel Truck Wheels

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

America's finest cars ever rolling along on

HYATT
Quiet
Roller Bearings

On busy street and crowded boulevard, they roll along in never ending procession—these fine motor vehicles, the product and pride of American genius and craftsmanship. And Hyatt roller bearings play an important part in the operation of all of them.

Manufacturers know that the quiet, trouble-free operation of these bearings remains entirely unaffected by continuous driving, the strain of constant stops and starts, and the jolts and jars of hardest going.

Therefore, as evidenced by the accompanying list, Hyatt roller bearings continue to be the choice of America's leading motor car builders.

HYATT ROLLER BEARING COMPANY
Newark Detroit Chicago San Francisco
Worcester Milwaukee Huntington, W. Va.
Minneapolis Philadelphia Cleveland
Pittsburgh Buffalo Indianapolis

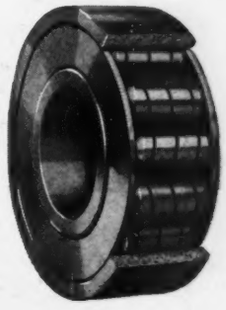
Motor Cars

Auburn
Bay State
Bell
Bradley
Buick Four
Cadillac
Case
Chalmers
Checker Taxi
Chevrolet
Cole
Columbia
Comet
Courier
Crow-Elkhart
Dixie Flier
Dodge
Dorris
Dort
Duesenberg
Earl
Essex
Ferris
Ford
Franklin
Gardner
Gray-Dort
Handley-Knight
Hayes-Taxicab
Haynes
Hudson
Hupp
Jewett
Jordan
King
Kissel
Kline-Kar
La Fayette
Leon Rubay
Lexington
Lincoln
Locomobile
Marmon
Maxwell
McLaughlin
Meteor
Mitchell
National
Oakland
Ogren
Olds
Packard-Six
Packard-Eight
Paige
Pierce-Arrow
Premier
Reo
Revere
Sayers 6
Southern
Standard
Stearns
Stutz
Winton

Commercial Vehicles

Acason
Acme
Ahrens Fox
American
American Motor Bus
Armleder
Atlas
Atterbury
Autocar
Available
Beck
Bell-Iowa
Belmont
Bessemer
Bethlehem
Biederman
B & R
Bridgeport
Brockway
Buffalo
Chevrolet
Chicago Truck
Clydesdale
Columbia
Comet
Commerce
Corbitt
Day-Elder
Defiance
Denby
Diamond-T
Doane
Dodge
D-Olt
Dorris
Driggs-Seabury
Duplex
Eagle
Erie
Fageol
Fargo
Federal
Fifth Avenue Coach
Ford
Four Wheel Drive
Freeman
Front Drive
Fulton
Garford
Gary
General Motors Truck
Gersix
Graham Bros.
G. W. W.
Hahn
Hawkeye
Hendrickson
Highway
Howe-Fire
Huron
Independent-Iowa
Independent-Ohio
Indiana
International Harvester
Jumbo
Kearns
Kelly-Springfield
Keystone
Kimball
Kissel
Kliebery
Koehler
K. Z.
Lange
Larabee
L. M. C.
Lombard
Maccar
Mack
Master
Maxwell
McDonald
Menominee
Miami Trailer
Moreland
Mutual
Nash
Napoleon
Netco
Niles
Noble
Norwalk
Old Reliable
Olympic
Oneida
Oshkosh
Paige
Parker
Patriot
Pierce-Arrow
Pittsburgher
Reliance
Reo
Republic
Riddle
Robinson
Rowe
Ruggles
Samson
Sanford
Schacht
Seagrave
Selden
Seneca
Service
Signal
Southern
Standard
Sterling
Stewart
Stoughton
Sullivan
Super
Thomart
Tiffin
Titan
Tower
Traffic
Transport
Triangle
Truxton
Twin City
Union
United
U. S.
Veteran
Vim
Ward-LaFrance
White
Wichita
Wilcox Trux
Wilson
Winther
Wolverine

In the rare cases where replacements are necessary, Hyatt roller bearings can be readily obtained from the Branches and Authorized Bearings Distributors of United Motors Service or from the service stations of the car or truck manufacturers.



THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

REPU

Yellow Chassis

SCORES of makes of trucks—only a handful nationally known, nationally used, nationally serviced.

Only trucks in use everywhere, in every business, have demonstrated their ability to do all things all buyers may demand.

Not only the Republic trucks in your own district back you up. Republics everywhere in the nation, in the mountains, in cities, on farms, in hot country and in cold have piled up proof as sales leverage for you. There are the indisputable concrete records not only of Republic trucks in your local industries, but the records of Republics in the whole world of commerce.

For Republic has more trucks in use than any other exclusive truck builder. And the margin is now increasing as the virile Republic management with all the old experience swings into stride.

In the wide market for the complete Republic line; in nationally known Republic goodness; *and in Republic stability* there is an entirely new deal for truck merchants. The Republic franchise is adapted to your conditions today. Get the facts about the Republic line in your territory.

REPUBLIC MOTOR TRUCK CO., INC., *ALMA, MICHIGAN*

More Trucks in Use than any other Exclusive Truck Builder

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

BLIC

Trucks

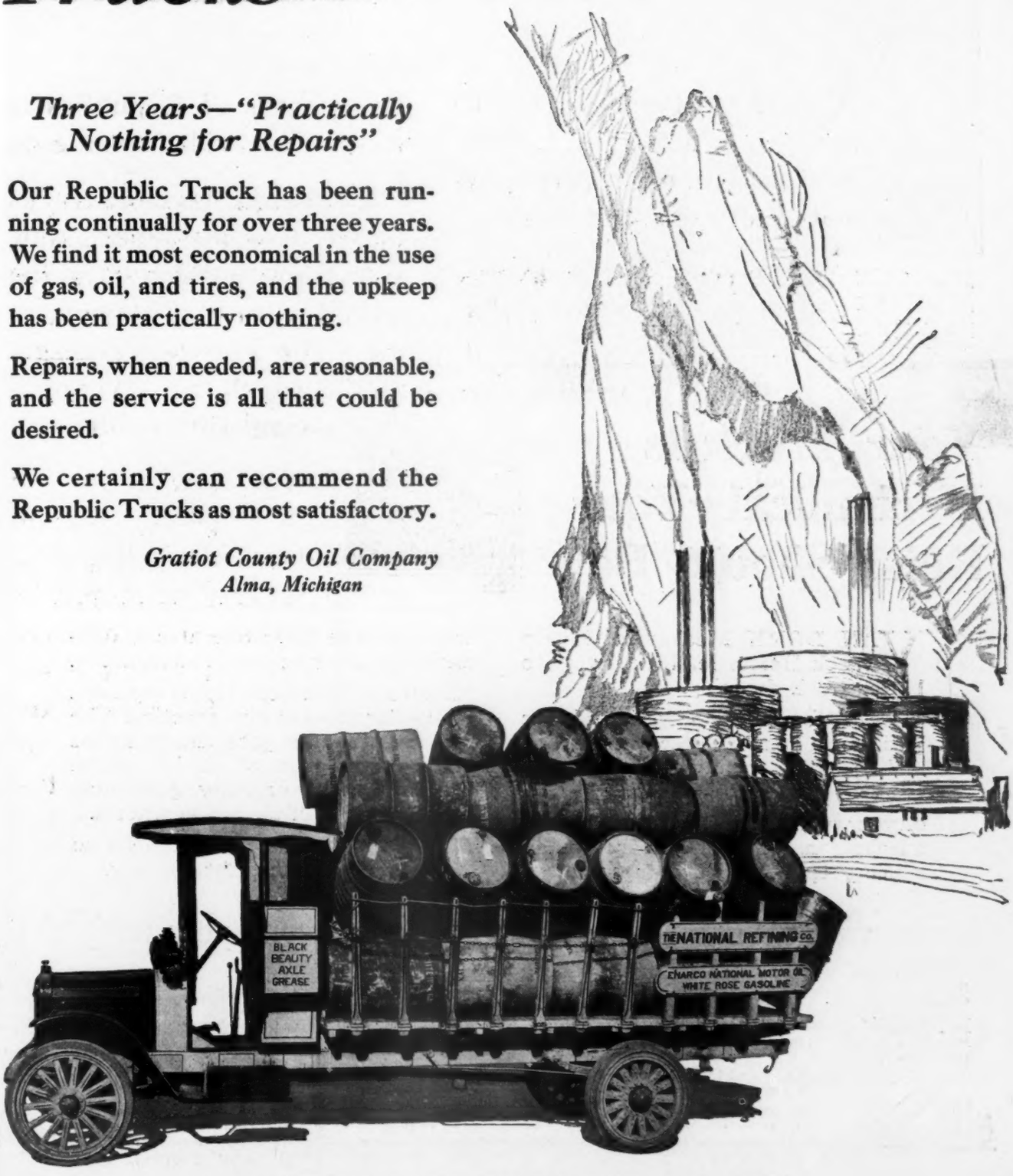
Three Years—"Practically Nothing for Repairs"

Our Republic Truck has been running continually for over three years. We find it most economical in the use of gas, oil, and tires, and the upkeep has been practically nothing.

Repairs, when needed, are reasonable, and the service is all that could be desired.

We certainly can recommend the Republic Trucks as most satisfactory.

Gratiot County Oil Company
Alma, Michigan



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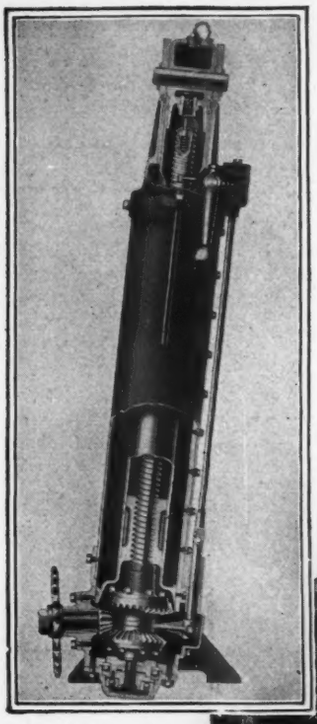
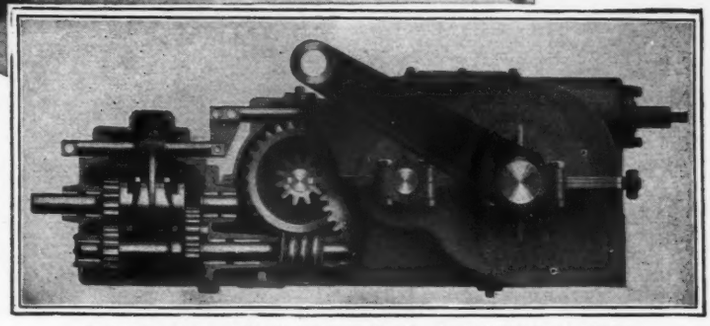


Cutaway view of the Van Dorn Vertical Mechanical Hoist showing the screw-jack principle of operation.



Cutaway view of the Van Dorn Mechanical Underbody Hoist

Your Truck is Mechanical—Your Hoist Should Be!

VAN DORN Mechanical Dump Truck Hoists lead the way to better truck dumping.

They are powerful in operation, always positive in control, speedy in action and need scarcely any attention.

With a Van Dorn Mechanical Hoist on your truck you never lose time while a leaky connection or a clogged pump is being repacked. Never any weather troubles, the hoist operates as efficiently in midwinter as in midsummer.

All parts of Van Dorn Hoists are made to standard automotive practice. The few maintenance jobs that may be necessary in years of service can be handled by any ordinary garageman or mechanic with the simplest tools.

Put a Van Dorn Mechanical Hoist on the next dump truck that you buy.

Complete Hoist and Body Catalog Free on Request

THE VAN DORN IRON WORKS COMPANY, CLEVELAND, OHIO

BRANCHES:
Boston
Chicago
Long Island City
Philadelphia
Providence
Washington

Van Dorn

MECHANICAL DUMP TRUCK HOISTS
BODIES — FRAMES — PRESSED PARTS

Dealers: We invite inquiries regarding territories and dealers propositions.

BETTER, FASTER TRUCK DUMPING

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A.M.C.A. Daily Test Bar Requirements
38,000 Pounds Tensile Strength 5% Elongation
45,000 Pounds Tensile Strength 7½% Elongation
50,000 Pounds Tensile Strength 10% Elongation

The American Malleable Castings Association has constantly requested higher specifications at which its members could aim.

Certificate Holders for the Quarter Ending June 30th, 1923

Albany Malleable Iron Co.	Voorheesville, N. Y.
Albion Malleable Iron Co.	Albion, Mich.
American Malleable Castings Co.	Marion, O.
American Malleables Co.	Lancaster, N. Y., and Owosso, Mich.
Badger Malleable & Mfg. Co.	South Milwaukee, Wis.
Belle City Malleable Iron Co.	Racine, Wis.
Chain Belt Co.	Milwaukee, Wis.
Chicago Malleable Castings Co.	West Pullman, Chicago, Ill.
Columbia Malleable Castings Co.	Columbia, Pa.
Columbus Malleable Iron Co., The	Columbus, O.
Danville Malleable Iron Co.	Danville, Ill.
Dayton Malleable Iron Co.	Dayton, O., Ironton, O., and Canton, O.
Decatur Malleable Iron Co.	Decatur, Ill.
Devlin Mfg. Co., Thomas	Philadelphia, Pa.
Eastern Malleable Iron Co., The—	Naugatuck Malleable Iron Works, Naugatuck, Conn.; Bridgeport Malleable Iron Works, Bridgeport, Conn.; Troy Malleable Iron Works, Troy, N. Y.; Wilmington Malleable Iron Works, Wilmington, Del.; Vulcan Iron Works, New Britain, Conn.
Erie Malleable Iron Co.	Erie, Pa.
Federal Malleable Co.	West Allis, Wis.
Fort Pitt Malleable Iron Co.	Pittsburgh, Pa.
Frazer & Jones Co.	Syracuse, N. Y.
General Electric Co.	Erie, Pa.
Illinois Malleable Iron Co.	Chicago, Ill.
Iowa Malleable Iron Co.	Fairfield, Ia.
Laconia Car Co.	Laconia, N. H.
Link-Belt Co.	Indianapolis, Ind.
Marion Malleable Iron Works	Marion, Ind.
Moline Malleable Iron Co.	St. Charles, Ill.
National Malleable Castings Co., The	Cleveland, O., Chicago, Ill., Indianapolis, Ind., Toledo, O., E. St. Louis, Ill.
Northern Malleable Iron Co.	St. Paul, Minn.
Northwestern Malleable Iron Co.	Milwaukee, Wis.
Peoria Malleable Castings Co.	Peoria, Ill.
Pittsburgh Malleable Iron Co.	Pittsburgh, Pa.
Rhode Island Malleable Iron Works	Hillsgrove, R. I.
Rockford Malleable Iron Works	Rockford, Ill.
Ross-Meehan Foundries, The	Chattanooga, Tenn.
St. Louis Malleable Casting Co.	St. Louis, Mo.
Saginaw Malleable Iron Co.	Saginaw, Mich.
Stowell Co., The	South Milwaukee, Wis.
Superior Steel Castings Co.	Benton Harbor, Mich.
Symington Co., T. H., The	Rochester, N. Y.
Terre Haute Malleable & Mfg. Co.	Terre Haute, Ind.
Trenton Malleable Iron Co., The	Trenton, N. J.
Union Malleable Iron Co., The	E. Moline, Ill.
Vermilion Malleable Iron Co.	Hoopeston, Ill.
Wanner Malleable Castings Co.	Hammond, Ind.
Warren Tool & Forge Co.	Warren, Ohio
Webster Mfg. Co., The	Chicago, Ill.
Wisconsin Malleable Iron Co.	Milwaukee, Wis.
York Mfg. Co.	York, Pa.
Zanesville Malleable Co.	Zanesville, O.

Constantly Aiming at Higher Standards of Quality

If a book were written today on the Romance of Iron and Steel, a chapter could well be devoted to the remarkable improvement in malleable iron during the past ten years. This youngest member of the family has grown to full maturity and has assumed a most important position in transportation and all branches of Industry.

The companies listed on this page operating as The American Malleable Castings Association together with eminent metallurgical engineers have labored unceasingly to produce *uniform malleables* of the highest quality and integrity. Starting at 38,000 pounds tensile strength and 5% elongation, it was not long until a majority of members were producing malleables having 45,000 pounds tensile and 7½% elongation which exceeded the specifications of The American Society for Testing Materials.

Upon direct solicitation of this association the A. S. T. M. specifications were raised to the higher figures. Not content with this accomplishment, The American Malleable Castings Association has adopted a new specification of 50,000 pounds tensile strength and 10% elongation; again requesting the various engineering societies to adopt these higher standards.

Thus Guardianship of consumers' interests by producing Certified Malleables is the primary function of this Association.

THE AMERICAN MALLEABLE CASTINGS ASSN.
The 1900 Euclid Building Cleveland, Ohio

POSITIVE PHYSICAL PROPERTIES AcA CERTIFIED TRADE MARK

CERTIFIED-MALLEABLE CASTINGS

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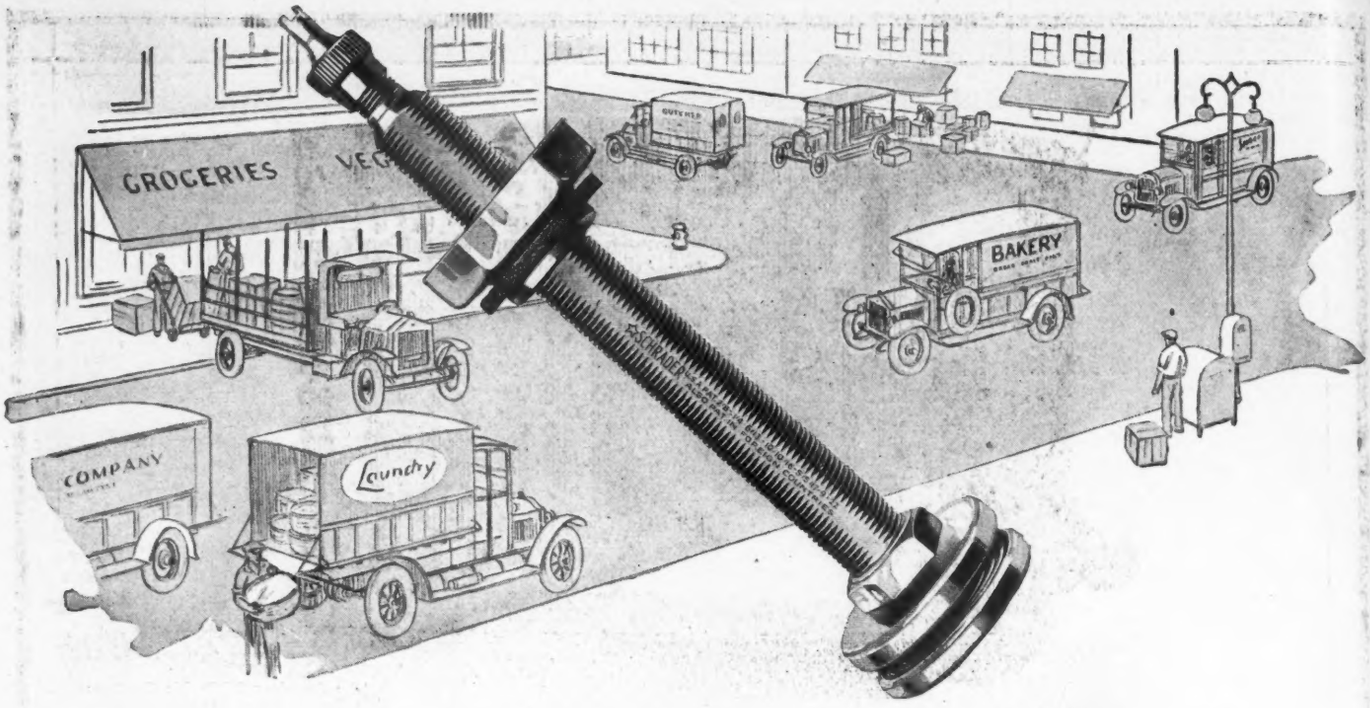

The tire valve serves them all

THE butcher, the baker, and the grocer are giving up their horse-drawn wagons. Upon the motor truck with its pneumatic truck tires they are placing the responsibility of serving millions daily in clamoring cities and quiet hamlets.

Every burden borne successfully by the pneumatic truck tire reflects credit on its tire valve. The life of these tires depends largely upon the ability of their valves to hold in the air put into them.

How Schrader Tire Valves help truck owners

Schrader Universal Tire Valves have been successfully retaining air in pneumatic truck tires since such tires were first used. The present Schrader Truck Tire Valve is the result of many years of effort and achievement in making air-tight valves.

This Schrader Valve is on practically all pneumatic truck tires made in this country and Canada. Its unfailing performance in holding air in pneumatic tires today is saving truck owners money by helping them get the maximum tire mileage and thereby reduce costs of truck operation.

Besides being absolutely air-tight, Schrader Truck Tire Valves operate simply, *automatically*. There is no extra manipulation required in removing and attaching valve parts. Inflating through them can be done easily and quickly.

Valve parts are interchangeable

Every truck valve is made, inspected, and tested with the greatest exactness and care. Valve parts are interchangeable, and any one of them—no matter in what section of the world it is bought—will fit any Schrader Truck Tire Valve.

If your men need to replace a valve inside, have them put in another Schrader High Pressure Valve Inside made specially for high pressures in truck tires. See that no truck goes out without a Schrader Valve Cap, Rim Nut Bushing, and Dust Cap on every tire valve.

The continued, unfailing performance of the Schrader Valve in holding in air results from use of the complete valve. Have your drivers carry extra Schrader High Pressure Valve Insides and Valve Caps in their tool kits for replacement. Get these parts from your supply house.

A. SCHRADER'S SON, Inc., Brooklyn, N. Y.
Chicago Toronto London
Manufacturers of Schrader Valve Insides, Valve Caps, and Tire Pressure Gauges

SCHRADER
TIRE VALVES

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VEHISOTE-Panelled Body Built by H. H. BABCOCK COMPANY, Watertown, N. Y.
Sold Through A. J. DIEFENDERFER CORP., N. Y., Babcock Distributors
Bodies Mounted on Ward Electric Chassis

Safe Delivery Plus Good Advertising

When the body of a delivery car is panelled with VEHISOTE (Wood-Fibre) Panels, the owner is assured of two definite results which will prove profitable to his business—

Absolute Protection for the Load and a Splendid Advertising Medium.

Both are provided by

TRADE **VEHISOTE** MARK

(Wood-Fibre) PANELS

VEHISOTE is Weather-proof—therefore cannot rust, like steel, and cannot split, crack or check, like ordinary wood.

Easiest, quickest and cheapest to repair in case of accident—as only the damaged spot need be replaced and repainted, instead of the whole panel, as is necessary with steel or wood panels.

Takes the most brilliant and lasting finish—therefore provides the best background for lettering and decoration, and keeps its good looks the longest.

"A *Better* Body Pays"

THE PANTASOTE COMPANY

CHICAGO	NEW YORK	DETROIT
Peoples Gas Bldg.	11 Broadway	1446 Penobscot Bldg.

FEDERAL
TRUCK TIRES

Two Testimonials Carry the Whole Story

From Virginia and Minnesota—two extremes of climate. From a laundry and a bus company—two extremes of service. These two letters show the range of Federal Truck Cord availability—and convincingly prove the economy of standardizing on Federals, for two reasons: First, because Federal delivers such high tire mileage; and second, because they keep delivery wagons, trucks and buses *moving* —saving *earning time*.

Three Years Without an Adjustment

926-28 West Broad Street, Richmond, Va., January 1, 1923

S. DORSEY SYDNOR, Richmond, Va.

Dear Sir: In the last three years we have used Federal Tires exclusively, and haven't required an adjustment. Can we say more?

Yours truly,
T & E LAUNDRY COMPANY, Inc.
R. L. Branner, President

Buses Average 23,000 Miles on Federals

Glenwood, Minn., June 11, 1923

We equipped our five buses with Federal Truck Cord Tires about one year ago after using about every standard make, and wish to state that the first two Federal Tires applied on a 6,600 pound White bus ran 27,000 miles. We have averaged 23,000 miles on all Federal Tires used. This far exceeds any mileage obtained from other makes. Our buses are on the road both summer and winter, and the tires are subjected to the hardest kind of service. We recommend Federal Tires to operators of fleets who are looking for low tire costs.

P. D. Q. TRANSPORTATION CO.
Per W. D. Cretzler

Near you there is a Federal Authorized Service Station, whose proprietor will gladly prove to you how Federal Truck Cords will cut down your truck-operating costs.

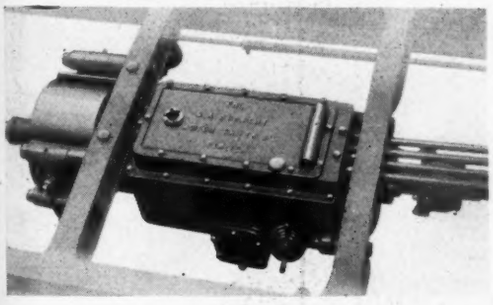
The Federal Rubber Company
Chicopee Falls, Mass.

A Great Sales Feature

The famous Schacht Ten-Speed Transmission is only one of the many unusual features that place Schacht Trucks in a class by themselves. Yet its appeal is so great to truck buyers that it plays a leading part in the selection of Schachts over other makes.

Owners instantly perceive the extra advantages afforded by this exceptional unit. They appreciate the wider range of gear reductions that it affords and the larger range of power and speed *at reduced engine speed.* Its efficiency and economy makes a big appeal to them, and they value the way it helps to eliminate vibration, rapid deterioration, trouble and expense.

Top view of Schacht Ten-Speed Transmission, showing S. A. E. opening for power take-off and the amidships location that makes it so readily accessible.



Ten years of constant service is the usual, and not the exceptional, record for Schacht Trucks. The Schacht system of construction accounts for the remarkable performance figures that we have on hand. A complete line from 1½ to 5 tons fits every haulage requirement. The Schacht franchise is today one of the most valuable. Some territories are open. Write.

THE G. A. SCHACHT MOTOR TRUCK CO.
8th and Evans Sts., Cincinnati, Ohio

Capacities 1-1½-2-2½-3-4 and 5 Tons

Schacht Ten Speed Trucks

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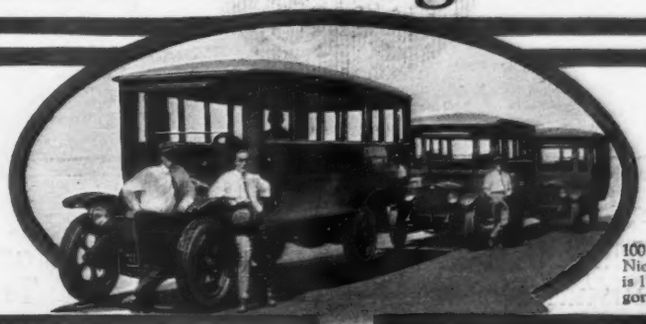
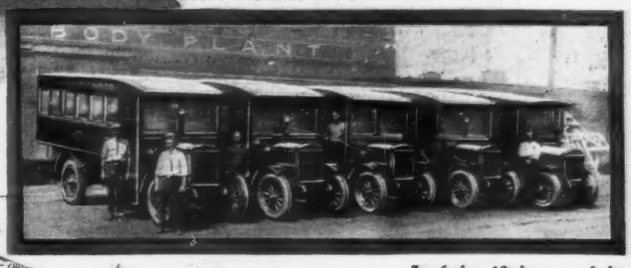
And Now—Still More Great Bus Fleets Swing to General

—goes a long way to make friends

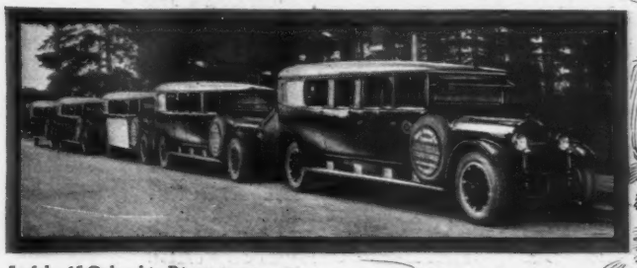


100% General equipped busses of Phillips & Nichols, of Lynchburg, Va. Their lowest mileage is 12,000 miles and many of their Generals have gone over 21,000 miles.

4 big Pierce-Arrow Trucks — all 100% General equipped — operated by the Seattle-North Bend Stage Co., of North Bend, Wash.

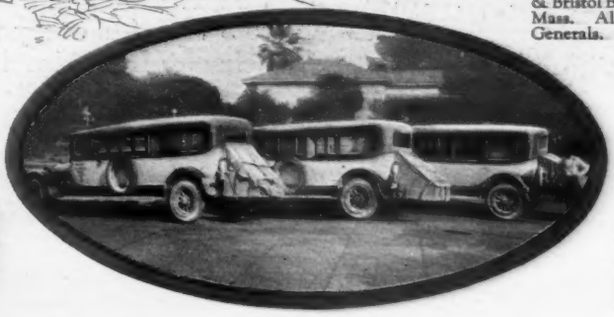


5 of the 10 busses of the South Bend Motor Bus Co. Their fleet is 100% General equipped.



5 of the 15 Columbia River stages operating out of Portland, Ore. Tests in service showed this company the economy of 100% General equipment.

5 of the 22 busses of the Norfolk & Bristol Bus Co., of Hyde Park, Mass. All 22 busses ride on Generals.



3 of 6 Cadillac stages owned by Moyer Bros., and running from Fresno to San Joaquin, Los Banos and Tracy, Cal. 75 miles of their route is the worst possible for tires, being mostly decomposed rock and shale. 100% General equipment has materially reduced their tire bills.

THE

GENERAL

CORD TIRE

THE GENERAL TIRE AND RUBBER COMPANY
AKRON, OHIO, U. S. A.

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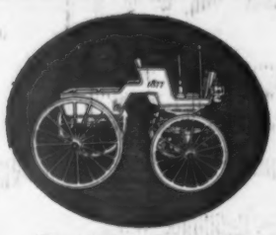
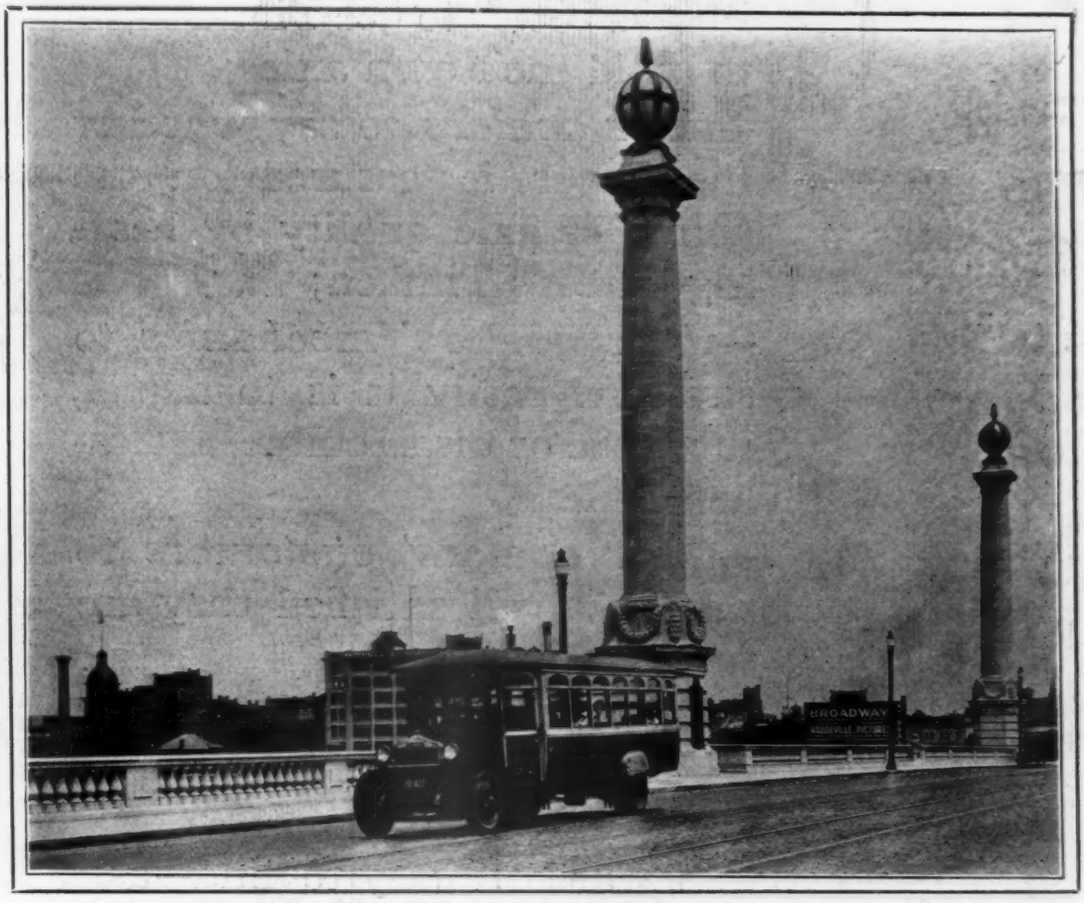


The first gasoline road wagon—a Selden



Selden "Street Car Type" Motorbus in Operation by Springfield Street Railway Co., Springfield, Mass.

Send for Special Motorbus Literature to

SELDEN TRUCK CORPORATION
Probert Street at University Ave.
ROCHESTER NEW YORK

Selden Motor Trucks

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We leave it to—

—*our customers* to say whether it pays better to use Timkens, or to build their own axles;

—*their dealers* to say whether the buyer is assured on the points of axle quality by hearing that it's Timken;

—*their dealers' mechanics* to say how easily it is to adjust, lubricate or disassemble a Timken Axle;

—*their dealers' customers* to say how well satisfied they are with their axles;

—*the motoring public* to say what the name Timken stands for;

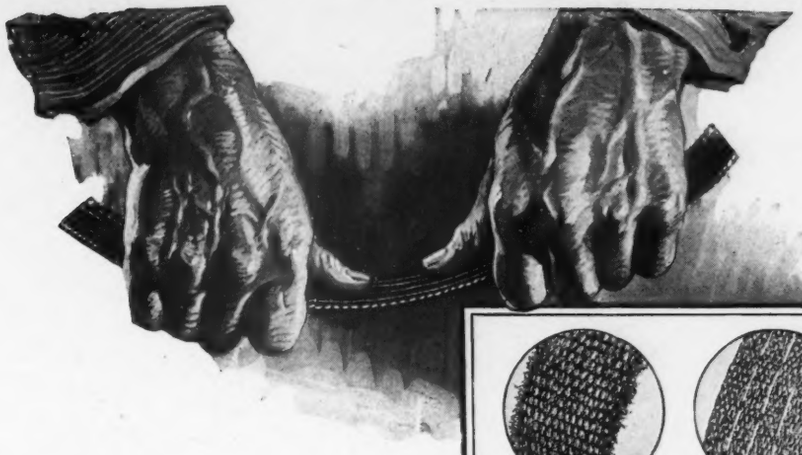
—they are all easy to find—ask them.

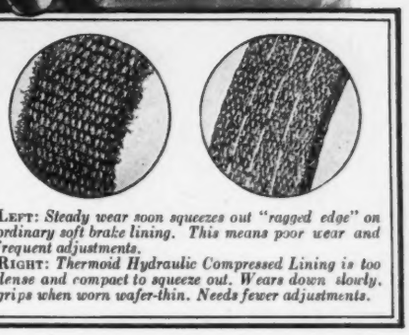
THE TIMKEN-DETROIT AXLE COMPANY, DETROIT, MICH.
Sole Representatives in the British Isles:
AUTOMOTIVE PRODUCTS COMPANY, 3, Berners Street, London, W. 1.

DTA CO

Building better motor-cars and motor-trucks is a big enough job to absorb all the creative energy and productive capacity in the automotive industry.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION





LEFT: *Steady wear soon squeezes out "ragged edge" on ordinary soft brake lining. This means poor wear and frequent adjustments.*
RIGHT: *Thermoid Hydraulic Compressed Lining is too dense and compact to squeeze out. Wears down slowly, grips when worn wafer-thin. Needs fewer adjustments.*

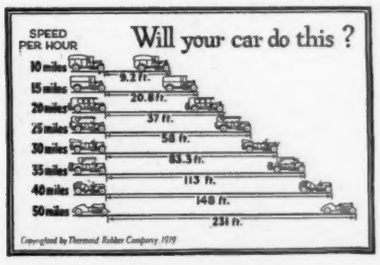
Here's why

it wears down so slowly instead of mashing down quickly

Take a short strip of Thermoid Compressed Brake Lining. See how compact it is as compared to an ordinary lining. Feel its density, its weight. This solid compactness makes Thermoid grip evenly and wear longer.

Tremendous hydraulic pressure—2000 pounds of it—takes all further "give" out of Thermoid. In its place is compressed *40% more material* than you find in any other brake lining made.

This compression, this extra material, gives you constant gripping power and longer wear till Thermoid is worn wafer-thin. It makes Thermoid *wear* down slowly instead of *mashing* down quickly.



Famous Thermoid Standard Chart—shows distances in which car should stop if brakes are efficient. Brakes lined with Thermoid meet these standards.

Thermoid doesn't "squeeze out"

Look at the edge of an ordinary brake lining—"squeezed out" on the drum. The tremendous hydraulic pressure on Thermoid takes out this excess "give."

That is why Thermoid is the last to show the "ragged edge" between drum and brake band. Watch, yourself, for this evidence of Thermoid's wearing quality.

Thermoid is also *grapnalized*—a special process which absolutely prevents it from grabbing, slipping or absorbing moisture.

National advertising is telling the Thermoid story to millions of motorists throughout the country this year. Write for full information about sales helps furnished to all Thermoid dealers.

THERMOID RUBBER COMPANY

Factory and Main Offices, Trenton, N. J.

New York	Chicago	Los Angeles	Detroit
Cleveland	Kansas City	Seattle	Atlanta
Boston	London	Paris	Turin
	San Francisco		

Thermoid Brake Lining

Hydraulic Compressed

Makers of "Thermoid-Hardy Universal Joints" and "Thermoid Crolide Compound Tires"

Makes every Ford motor "hum a little sweeter"

Rexoid—a new transmission lining whose compounds cannot dissolve and foul up your oil

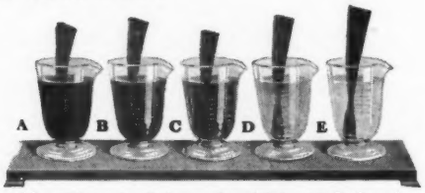
You've got to have the lubrication right—your oiling system *must* be kept clean. And one of the greatest dangers to proper lubrication is found in a transmission lining which dissolves its harmful treating compounds in the oil. Most treated linings do this.

Rexoid is different. It was made *specifically to overcome this fault* and to provide reliable gripping. It does both, and the proof lies in its actual performance under the most exacting of tests.

An astonishing difference in five leading makes

At the right is shown a startling test of five different makes of treated lining. The varying shades of the oil in the beakers mark the extent to which each make dissolved its compounds in the short space of *six hours.* Note the oil in the fifth beaker. It remained absolutely clear—not only after six but after forty-eight hours of continuous soaking.

The lining it held was Rexoid—the new Ford Transmission Lining that is *insoluble in oil.*



After 48 hours in oil, four makes of lining (A, B, C, and D) had discolored the oil, giving off tar and other harmful ingredients. The only lining that did not foul up the oil was E—Rexoid.

Only in Rexoid do your customers get this insoluble compound. It is compressed, practically vulcanized, into every fibre of a high-grade woven fabric. Compound and fabric become one solid mass.

This hydraulic treatment gives Rexoid

1. More material to the square inch
2. A smoother surface and a longer life.

Tell your trade the facts about Rexoid. It's easy to sell, and because it fills a real need your customers are satisfied. This means continuous profits to you.

Leading jobbers carry Rexoid. If your jobber cannot supply you, send us his name.

THERMOID RUBBER COMPANY

Factory and Main Offices, Trenton, N. J.

New York	Chicago	Los Angeles	Detroit
Cleveland	Kansas City	Seattle	Atlanta
Boston	London	Paris	Turin
	San Francisco		

REXOID

Transmission Lining for Ford Cars

Better your service with Splitdorf Ignition

THE new Splitdorf Magneto (Model SS) produces sparks of such vigorous strength, such sizzling intensity and operates with such never-ending dependability that its installation on any engine means new life to that engine—easier starting, quicker get-a-way, more power, less fuel and greater economy under any and all conditions of service.

That is why this supreme achievement in magneto construction is now being used so extensively to replace the original ignition equipment on trucks, buses and tractors where operating conditions demand the utmost in service, economy and dependability.

SPLITDORF ELECTRICAL COMPANY
Newark, N. J.

We do custom moulding

The Splitdorf Green Jacket Spark Plug—the plug that, because it is insulated with multiple layers of India Ruby MICA wound laterally around an extra heavy electrode, stands up under all conditions and is EVERLASTING.

New Splitdorf Magneto Model SS-4

Thirty minutes after installation, Splitdorf Pressed Piston Rings are guaranteed to give more power, save oil, save gas, stop fouling of spark plugs and smoking of engine.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

The Whole Future of Rests Upon

No. 108 De Luxe Seat

Highest grade luxurious seat. Deep spring-edge cushion and high spring-edge top back. Designed for type of equipment where special comfort and ease is required. Any covering material desired. Light weight steel pedestal and steel supports for cushion and back.

No. 108 Special Seat

Soft and comfortable spring-edge spring work, with easy slant of cushion and back. Designed particularly for medium grade buses where greater comfort is desired. Any covering material desired. Light weight steel pedestal and steel supports for cushion and back.

Exaggeration?

Not a bit of it.

The history of transportation is one long, upward climb toward greater convenience, service and *comfort.* The steam railways with most comfortable equipment get the business. The most comfortable taxi-cab has the call. Can the motor bus ignore the most primary desire of human nature—*comfort?*

How can a Motor Bus *be made* comfortable?

Of course it must be properly proportioned and wisely designed. *But comfort, after all, depends on seats.*

Hang the body as low as you will. Apply shock-absorbing devices. Make the interior as roomy and spacious as possible—and still you have not attained the right result *unless the seats are comfortable.*

Watch how people choose the comfortable Bus every time in preference to the stiff-

HALE-KILBURN

General Offices
1800 LEHIGH AVENUE

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Motor Bus Transportation
Comfortable Seats!

backed, hard-seated one. It's only human nature to do it.

If you were about to ride several hundred miles in a Motor Bus, wouldn't *you* select the deep upholstered, spring-cushioned-seated Bus with plenty of knee room in preference to one with ordinary seats?

The comfortable Bus not only gets the business—it *holds* the business. It's a money-maker. Hale-Kilburn build the kind of seats that make Motor Buses comfortable. When the first Motor Buses were built such seats as these were not in evidence. Now that they have become an established part of our national transportation, comfortable seats are a positive necessity.

Today, Hale-Kilburn Motor Bus Seats represent the utmost in comfort, utility and appearance. They are worthy of the part that they are playing in placing Motor Bus transportation on a permanent and satisfactory basis.

For these reasons wise Bus manufacturers are using them and dealers and operators prefer them. Let our engineers co-operate with yours. Address our factory at Philadelphia, or any of our branches listed below.

Hale-Kilburn Company, 30 Church Street, New York
Hale-Kilburn Company, 1530-33 McCormick Building, Chicago, Ill.
Mr. E. A. Thornwell, 1513 Candler Building, Atlanta, Ga.
National Safety Car & Equipment Co., Theresa and Clark Avenues, St. Louis, Mo.
R. W. Jamison, 71 First Street, San Francisco, Cal.
Eccles & Smith Company, 447-49 E. 3rd Street, Los Angeles, Cal.
Harry M. Euler Company, 46 Front Street, Portland, Ore.
T. C. Coleman & Son, Starks Building, Louisville, Ky.

COMPANY

and Works:

PHILADELPHIA, PA.

No. 108 Modified Seat

Spring cushion and back, with comfortable pitch. Any covering material desired. Light weight steel pedestal and steel supports for cushion and back.

Bus Driver's Seat

Strong, light and compact. Single steel pedestal base. Rigid support for driver, allowing full freedom of the arms and affording secure and comfortable seat. Any covering material desired.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Prest-O-Lite
Prest-O-

Gas Never Fails

Over the Roughest Roads

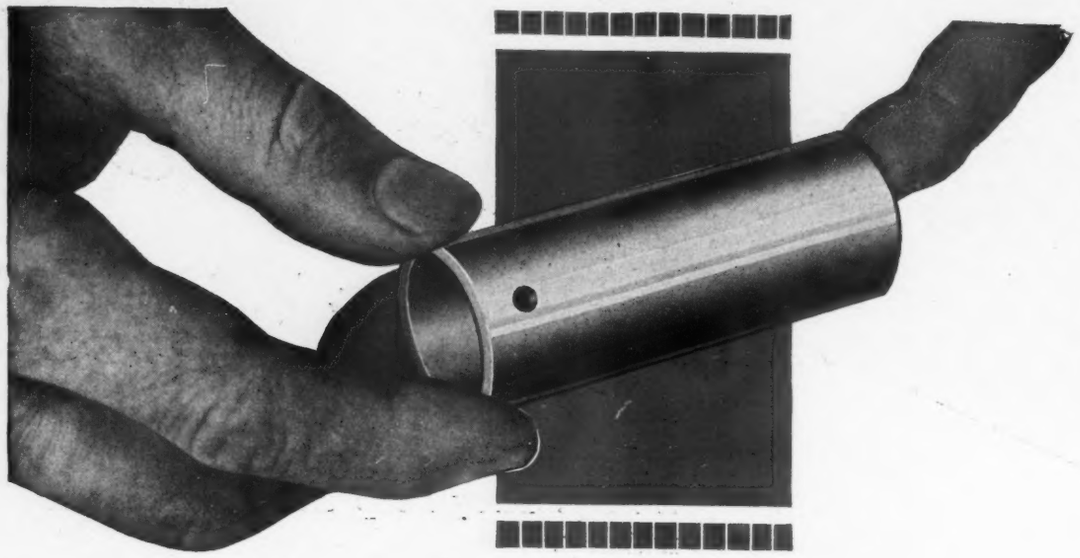
LIGHTS that the driver can "bank on" are more than a help. They keep the truck on the job and save money.

Install Prest-O-Lite Gas equipment now. Approved by public authorities. Jars, jolts and bumps cannot put it out of commission. When the driver is "up against it" he is mighty glad to have that clear beam of artificial daylight showing what is ahead of him. Have the equipment put on the old or new truck —and then you have nothing to buy but the gas. Any one of our 22,000 Prest-O-Lite Gas Stations quickly exchanges full tanks for empties. You pay only for the gas.

THE PREST-O-LITE COMPANY, Inc., *Indianapolis, Indiana*
Small Tank Sales Department

New York Office: 30 East 42nd Street Pacific Coast Office: 599 Eighth Street, San Francisco
In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto

Lite Gas



Appearance Tells You Nothing

On the outside all piston pins look pretty much alike. To determine how good they are you must know just how they are made. In no other part for automotive engines does quality of raw material and accuracy in manufacture play a more important part.

Below, we tell three important facts about GILL Piston Pins. Note that the same high standards for which Gill Piston *Rings* are famous are adhered to.

Gill Pins

Made from solid bar stock. Every pin conforms strictly to engine manufacturers' design and steel specifications. Every shipment of material must pass a strict metallurgical test. Three separate heat treatments produce a hardness which a scleroscope test shows to be 70 to 90 degrees. The core remains soft. Loose inside scale is removed by sand blasting.

Our grinding limits are two-tenths of one one-thousandth of an inch (.0002) for taper and roundness and one half of one one-thousandth (.0005) for size. This absolutely assures perfect surface contact. Gill Pins can be fitted quickly by one setting of the reamer. The most accurate and sensitive gauges obtainable are used in the inspection of every pin.

The same service for which Gill Piston Rings are noted can be had in connection with Gill Piston Pins. Complete stocks of standard and oversize pins for all engines are carried by jobbers and dealers in all sections of the country. In addition there are thirty-one Gill branches located in principal cities. You can always get Gill Piston Pins quickly.

Write for a complete price list and specification book.

GILL MANUFACTURING COMPANY

8300 South Chicago Avenue, Chicago

Gill
Interlocking Joint
Piston Ring

Special
Oil Wiper
Piston Ring

Servus
Step-Cut
Piston Ring

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Sioux Valve Seat Reamer Set

No shop equipment is complete unless it includes this time-saving, labor-saving and profit-raising set.

It's a complete outfit for practically all reseating jobs. Comes complete in box. Set consists of 10 Sioux Valve Seat Reamers and 4 Pilot Stems as follows:

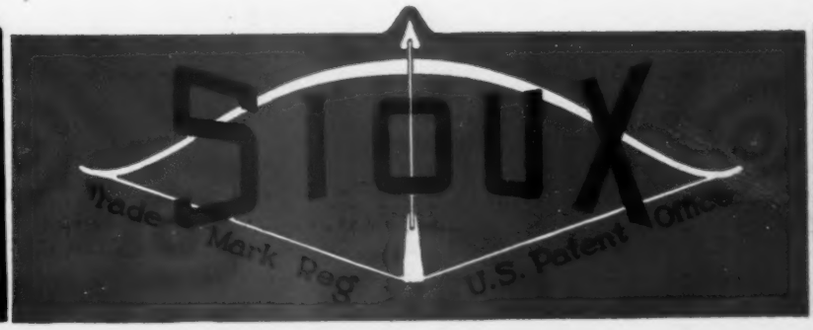
1½ inch. . . 45°	1¾ inch. . . 30°	2 inch. . . 45°	2½ inch. . . 45°
1⅝ " . . . 45°	1¾ " . . . 45°	2⅛ " . . . 45°	PILOT STEMS
1⅝ " . . . 30°	1⅞ " . . . 45°	2¼ " . . . 45°	5/16 3/8 7/16 ½

Jobbers Everywhere Sell Them

Write for Catalogue and Valve Seat Reamer Specifications

ALBERTSON & CO. SIOUX CITY, IOWA

"The Well Equipped Shop Gets the Business"



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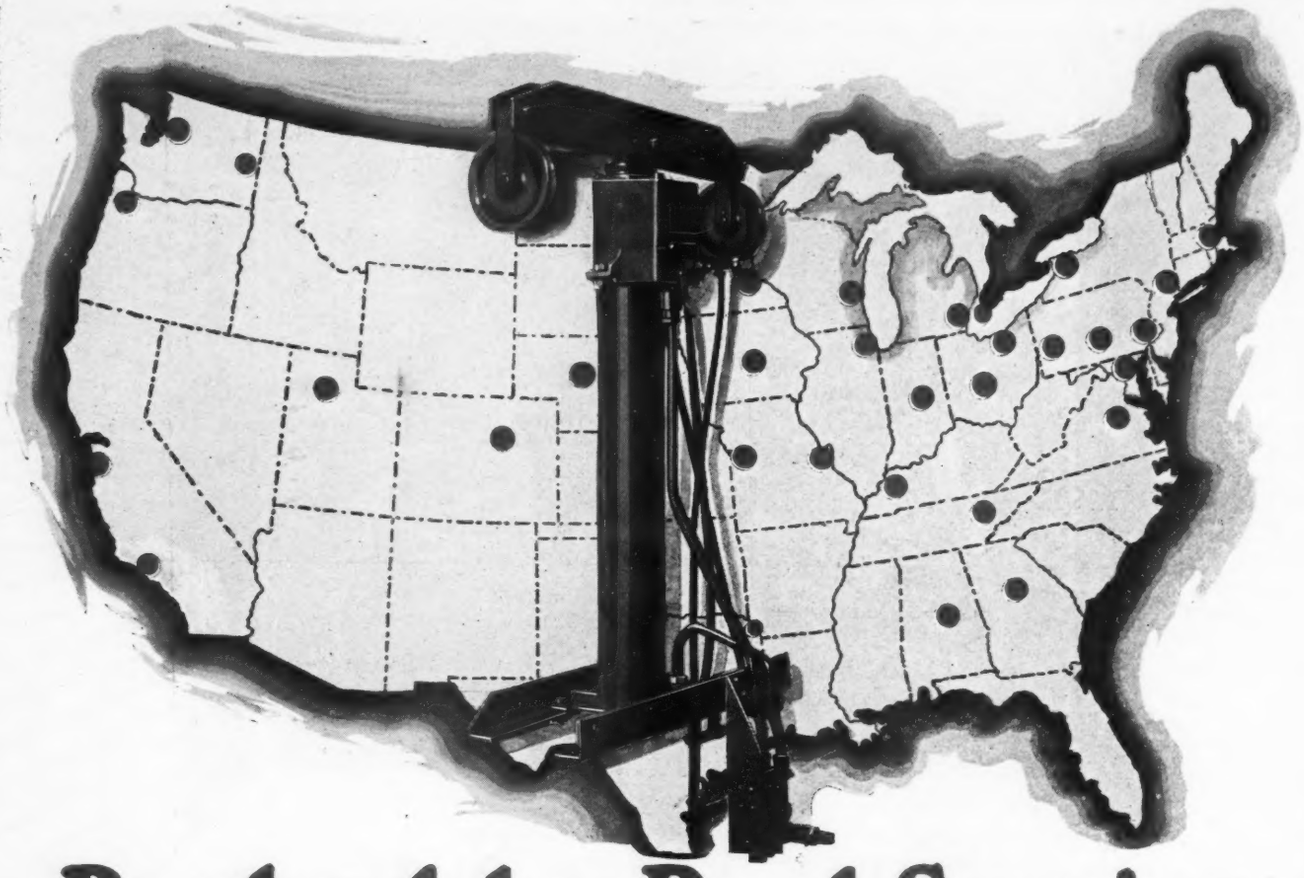
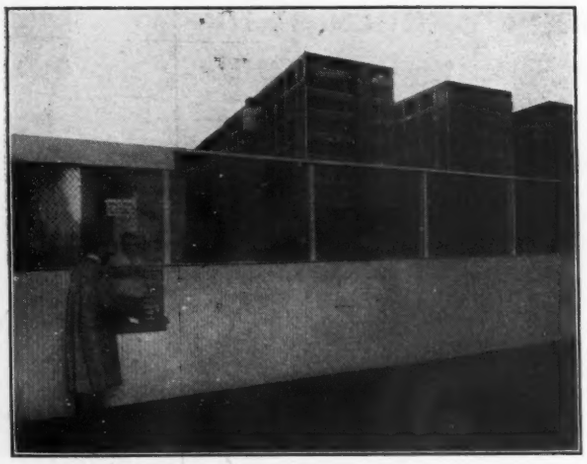


Backed by Real Service



Part of the mammoth stock rooms at the great Wood-Detroit factories, where every part for all types of Wood-Detroit Hoists and Power Take-offs are carried. Complete stocks are also carried at stations shown on the map.

The dump truck must be kept going. To insure this, the hoist must be simple, dependable, proven; backing this must be a real service—one that can be relied on to meet any emergency quickly and certainly.

WOOD DETROIT

For more than a decade, thousands of trucks have proven the dependability and stamina of Wood-Detroit Hydraulic Hoists; and the system of Wood-Detroit service stations, reaching from coast to coast, insures continuous performance.

Built by "Car" Wood

Wood Hydraulic Hoist & Body Company

World's Largest Exclusive Makers of Hydraulic Hoists and Steel Bodies

Detroit, Michigan **Windsor, Ontario**

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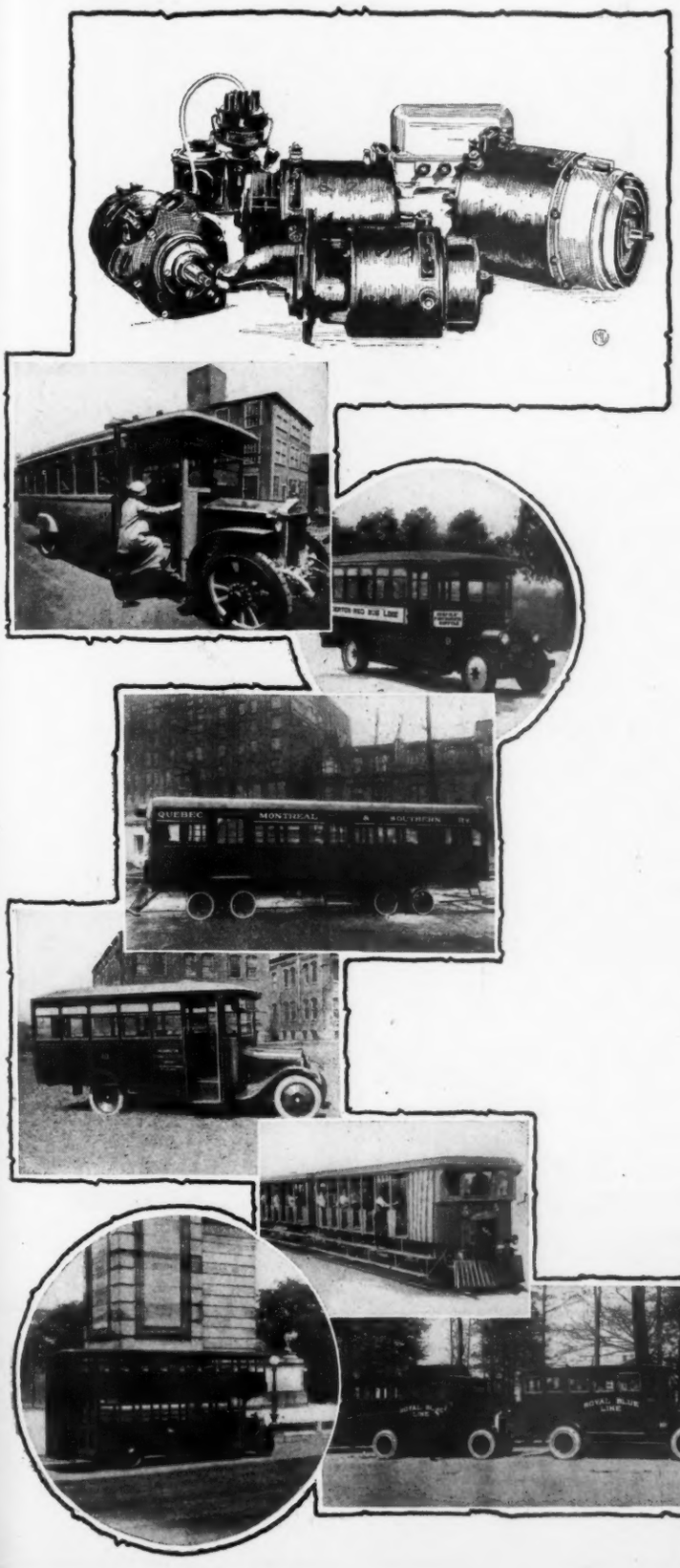
NORTH EAST

ELECTRICAL EQUIPMENT IS USED WHERE DEPENDABILITY COUNTS



North East Electric Lighting, Starting and Ignition Equipment is meeting the requirements of every class of bus service with the same success that it has established in the Passenger Car, Truck, Taxicab and Motor Boat field.

North East Bus Equipment is in use on—

Fifth Avenue Coach	Yellow Coach
Four Wheel Drive	Graham Brothers
Gramm Pioneer	Selden
Brockway *(For N. Y. State Rys.)*	Mitten-Traylor
Reo	White

Mack International
(For Connecticut Co.)

NORTH EAST ELECTRIC CO.

ROCHESTER, N. Y., U. S. A.

Manufacturers of

Starter-Generators	Ignition-Generators
Generators	Horns
Starting Motors	Speedometers
Ignition Units	Switches - Regulators

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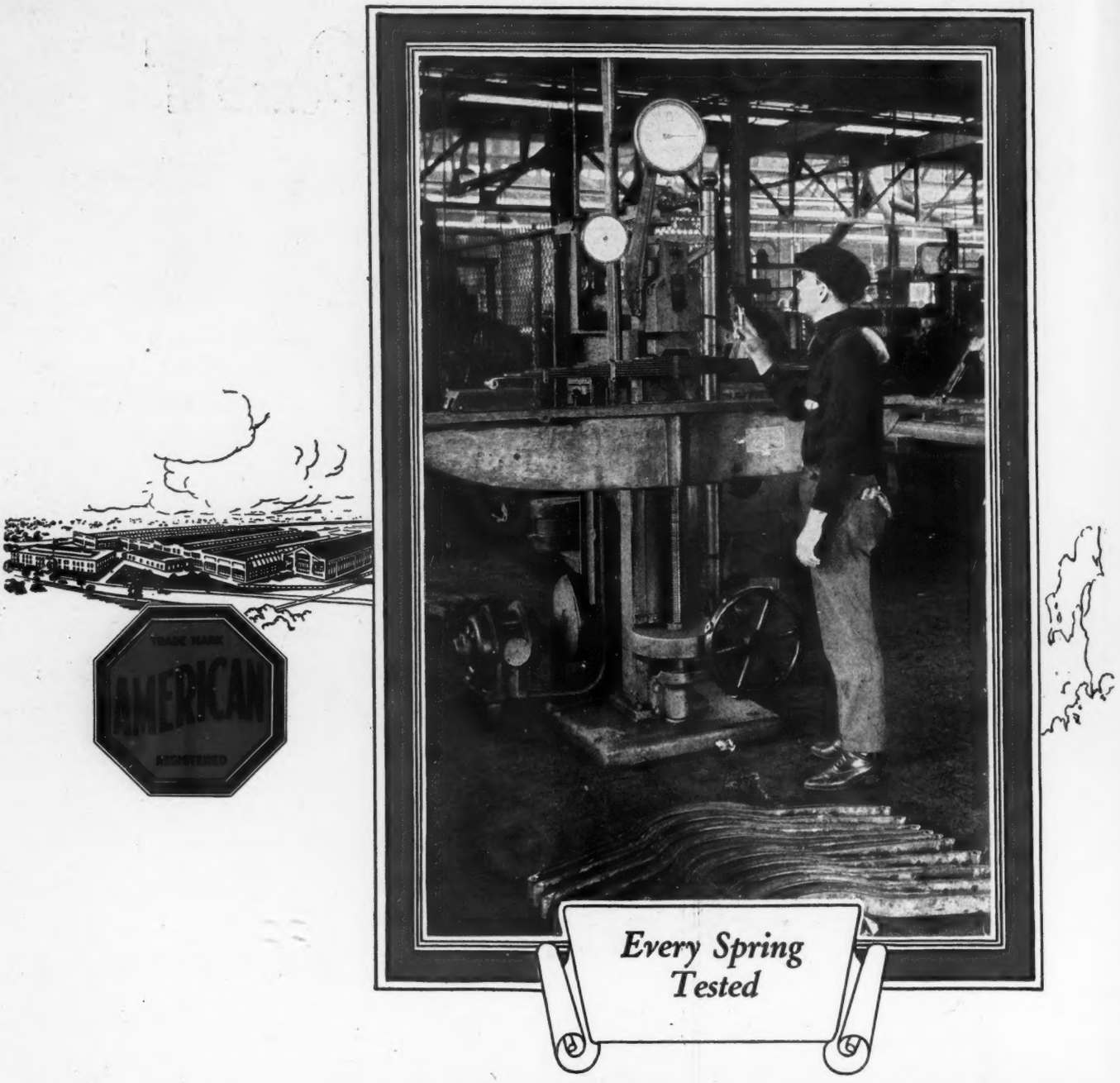

AMERICAN
Springs

AMERICAN AUTOPARTS COMPANY

9779 FRENCH ROAD DETROIT, MICHIGAN

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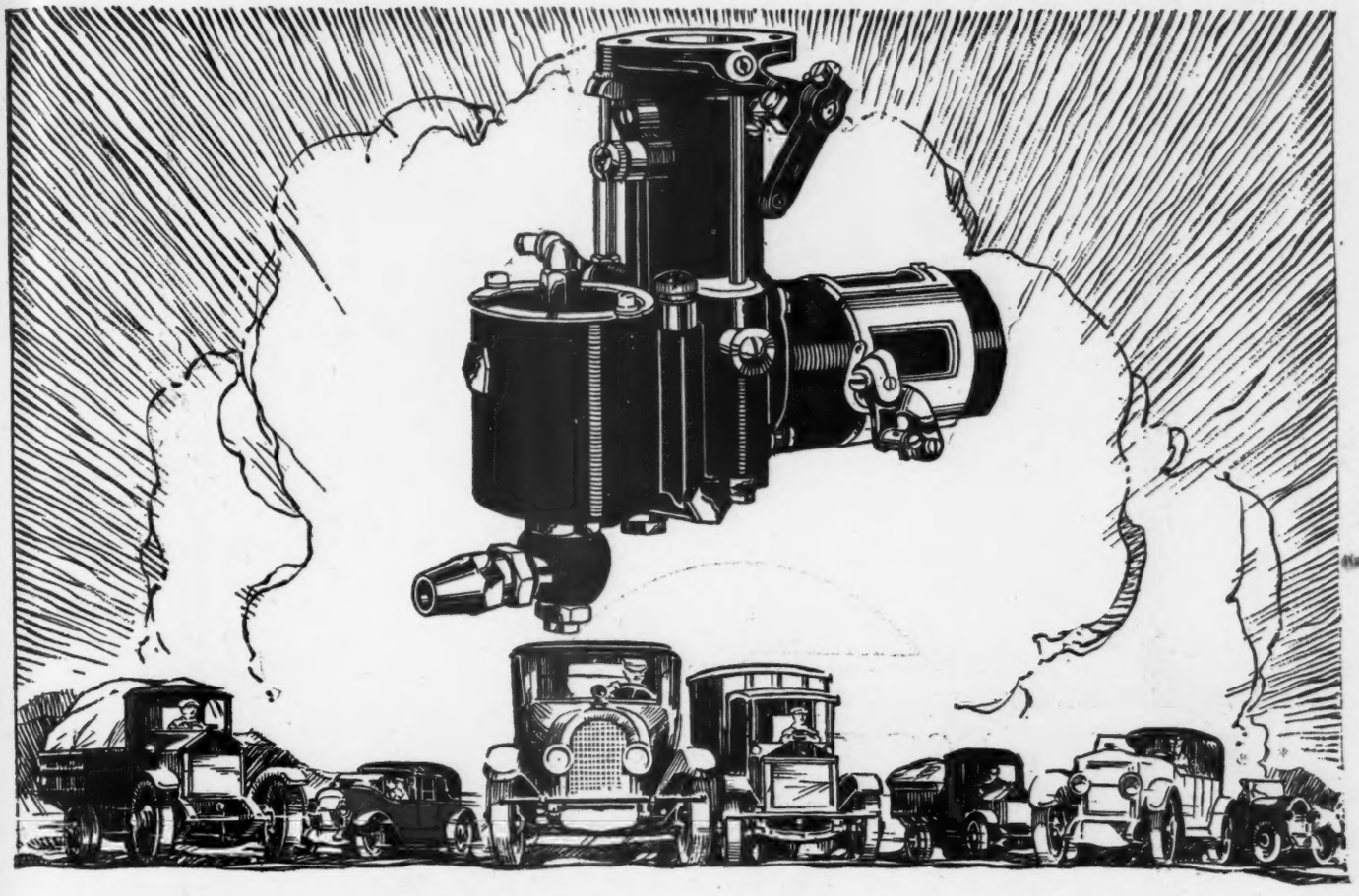
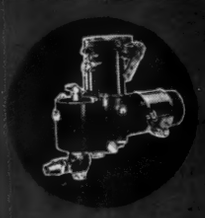


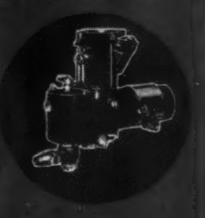
Starts them all -instantly

Runs them all -perfectly

Write for descriptive literature, state name, year and model of your car.
Stromberg Motor Devices Company,
Dept. 936, 64 East 25th Street, Chicago.



New STROMBERG Does it!
CARBURETOR



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Why Does Prest-O-Lite List Its Distributors in the CHILTON AUTOMOBILE DIRECTORY?

Because the Prest-O-Lite Company, Inc., realizes that it is just as important to tell a buyer *where to buy as what to buy.*

On one side of its two-page advertisement to buyers this company supplies detailed purchasing data about Prest-O-Lite Gas Tanks and attachments. On the other it lists its distributors so buyers will know where to purchase locally or nearby.

This is the kind of a tie-up that creates sales. Many other advertisers in the CHILTON AUTOMOBILE DIRECTORY, besides Prest-O-Lite, have also discovered the value of listing their distributors.

CHILTON AUTOMOBILE DIRECTORY

Chilton Automobile Directory

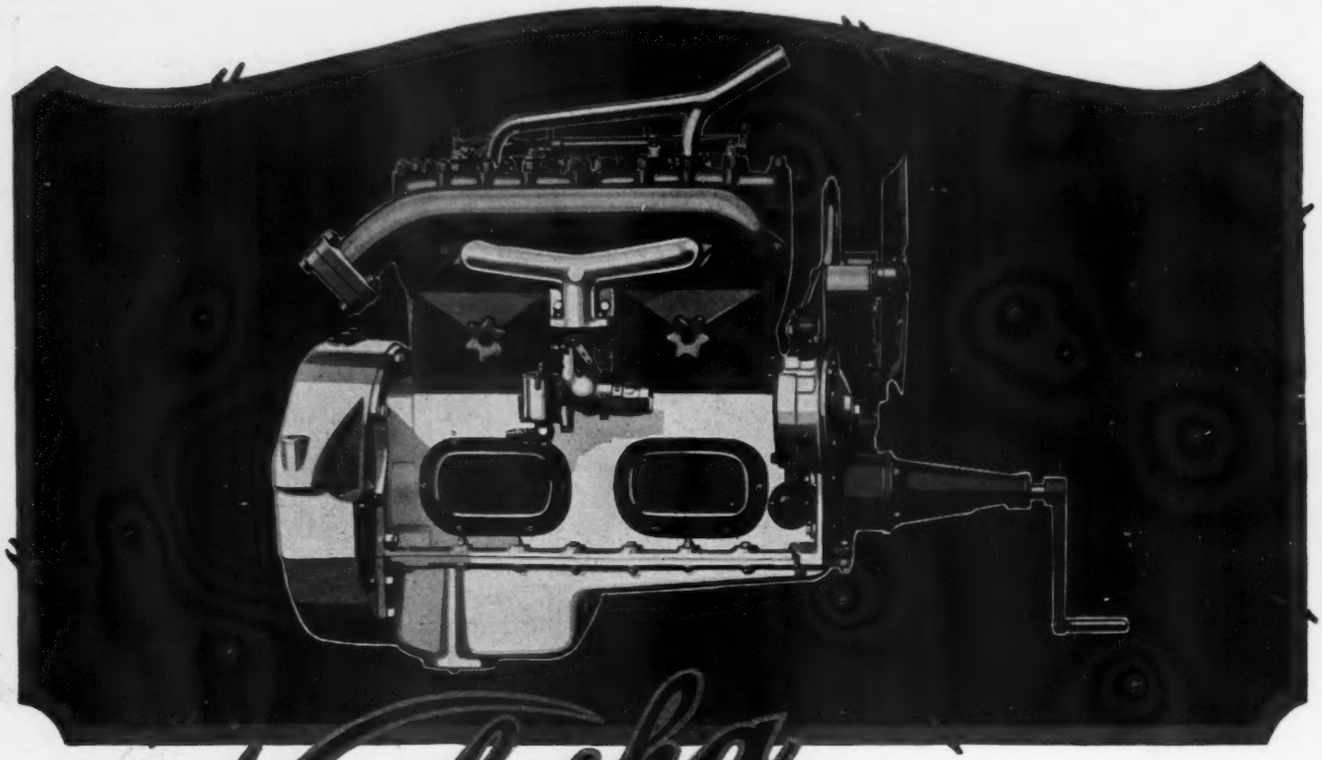
Are *Your* Distributors Listed in the Industry's Great Purchasing Guide?

Whether you distribute through branches, jobbers or distributors, or through them all, the names and locations of your sales depots should be published in the CHILTON AUTOMOBILE DIRECTORY. Buyers consult this book not only to find out what to purchase but also *where to purchase* with a minimum of time and effort. If you describe your product convincingly and list your distributors in this great purchasing guide you make it easy for them to buy your product.

Advertising of this kind in the CHILTON AUTOMOBILE DIRECTORY pays because it renders an appreciated service to buyers, who respond by purchasing the products advertised.

Chestnut and 56th Sts., Philadelphia, Pa.

The CHILTON Symbol, the trade-mark of catalog advertising, in the CHILTON AUTOMOBILE DIRECTORY, displayed in your advertising, directs buyers to definite purchasing data in the CHILTON AUTOMOBILE DIRECTORY.



Waukesha
TRADE MARK

BUS and TRUCK MOTORS

In more ways than one does the selling superiority of the bus and truck equipped with the new Waukesha Bus and Truck Motor assert itself. For one thing, its unusual economy of operation opens up new and broader sales fields, where prospective purchasers will be quick to see its earning value in their business. Such fields can and should be turned into sales and prestige for your product. Write today for complete information.

THE WAUKESHA MOTOR COMPANY, Waukesha, Wisconsin

The World's Foremost Builders of Bus, Truck, Tractor and Industrial Motors Exclusively

SALES OFFICES:

1824-1825 Aeolian Building
33 West 42nd Street
Telephone: Longacre 5784
NEW YORK

503-505 Capitol Theatre Building
Madison Avenue Side
Telephone: Cadillac 4482
DETROIT

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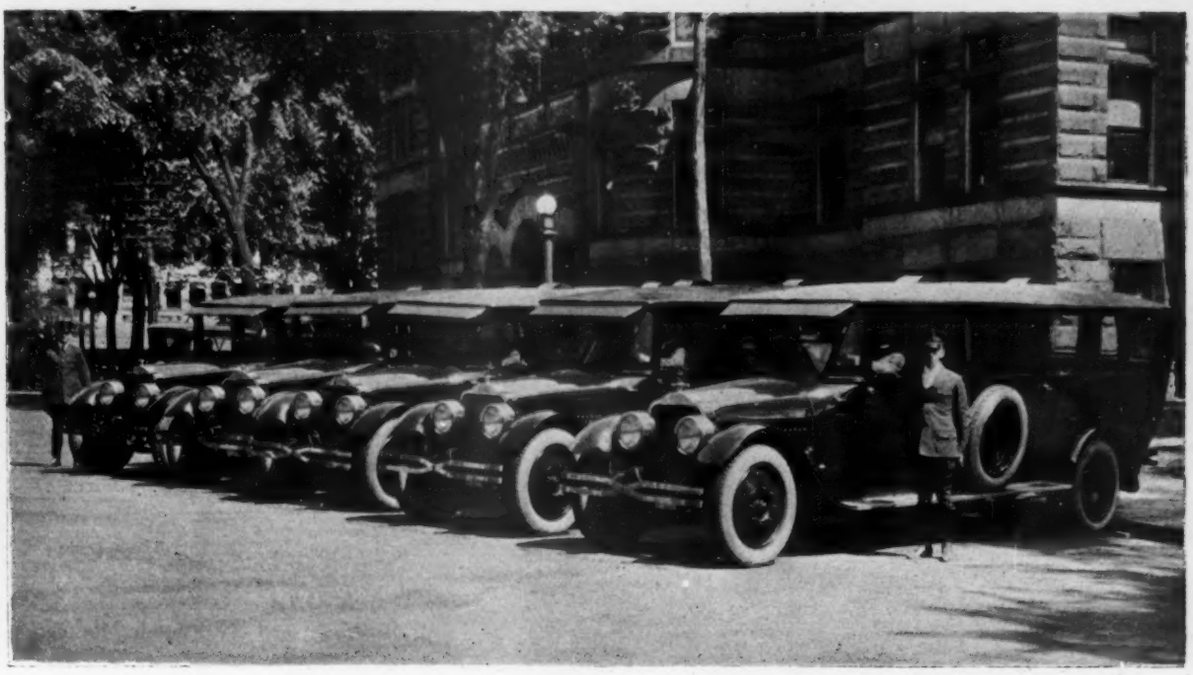

A Fleet of Pennsylvania-Ohio Motor Buses equipped with Cox Bumpers front and rear

THESE beautiful coaches, plying between points in Ohio and Pennsylvania, are part of the fleet of the Pennsylvania-Ohio Electric Company of Youngstown, Ohio.

The de luxe bodies were furnished by the Bender Body Company.

And the strong, handsome bumpers (model 19) were furnished by Cox.

Not only the tremendous strength of Cox Bumpers, but the Custom-made Attachments which make them part of the car they equip, are steadily increasing their use throughout the country.

The EATON AXLE & SPRING COMPANY
COX BUMPER DIVISION
CLEVELAND

COX
BUMPERS

An EATON PRODUCT

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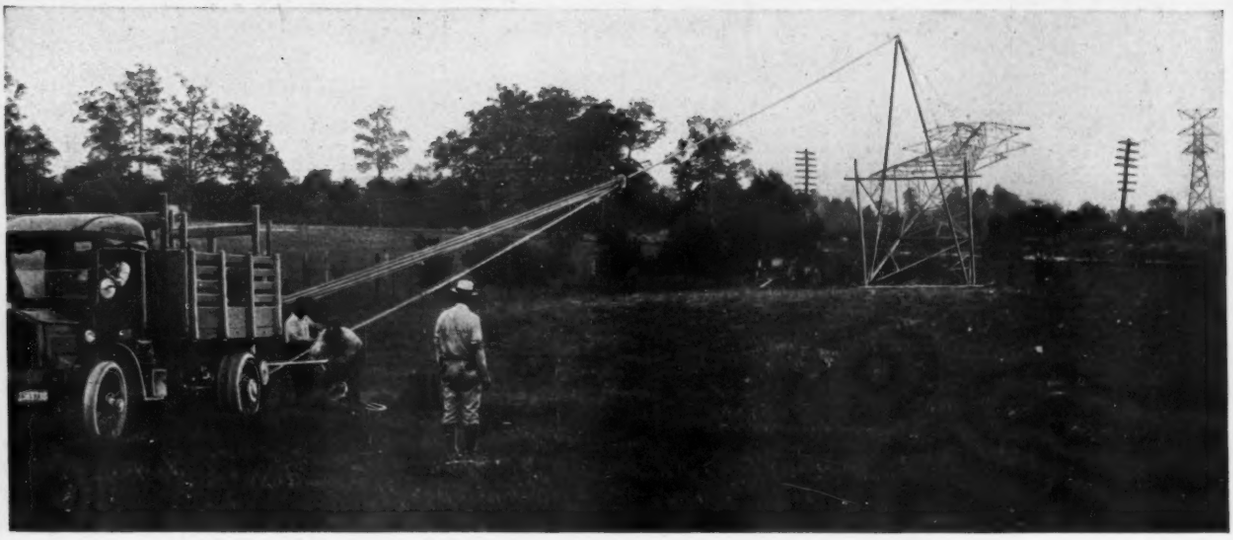
MEAD-MORRISON



UNDERSLUNG WINCH

The All-Purpose, Out-of-the-Way Winch

ERECTING transmission towers is easy for this power company, with a Mead-Morrison Underslung Winch operating on the idling power of the truck's engine. A one-man machine—it can be used equally well for erecting poles, cable hauling, or loading reels. The Mead-Morrison Underslung Winch is mounted under the rear, leaving the entire deck of the truck free for loading.

Every telephone, telegraph, street railway, electric light and power company using this winch finds it a time and labor saving addition to its maintenance equipment. Progressive owners are sure to appreciate the service done when you sell them Mead-Morrison Winches.

We also manufacture vertical and horizontal capstan winches, and drum winches for installation behind the cab. Write for full information.

MEAD-MORRISON
MANUFACTURING COMPANY

922 Prescott Street **East Boston, Mass.**

Multiplies Man-Power
HOISTING — HAULING — HANDLING

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Spring Substitution or Spring Replacement

Which?

A mongrel spring or a spring built to the truck makers' specifications.

Which will serve the truck owner best—which should the dealer prefer to see installed—which will profit the repair man most?

The question hardly needs an answer—but you'll find it completely and convincingly answered on the following page.

To Serve the Car Owner is to Serve the Industry

Detroit Steel Products Co

You Can Get Detroit Springs for Every Popular Make of Truck All "Built to the Truck Makers' Specifications"

Send for this price book today.

You know that nothing less than springs "built to the truck makers' specifications", springs that exactly duplicate the original spring equipment, can properly conserve the engine, chassis, body and tires—*and give your customers complete satisfaction.*

You know how original equipment springs are built, how the correct steel composition is definitely determined, how the length, width and thickness of every leaf must meet the most exacting specifications and how they are tested to the thousandth of an inch. You know, too, that small shops cannot comply with these demands.

Then how can you be sure that you are using genuine springs on the limping trucks that come to you for repairs?

Here is One Way to be Absolutely Sure

Insist upon having Detroit Springs. Every Detroit Spring sold for replacement on all makes and models of trucks is "Built to the Truck Makers' Specifications."

Each year millions of Detroit Springs are built for original equipment on leading cars and trucks—and millions more are built for replacement. In your immediate territory you will find a Detroit Spring Distributor who can make quick shipment of practically any kind of spring you may need. The short delivery time required will surprise you.

The Detroit Spring Distributor really acts as your depot for springs—saving you freight, cartage costs, warehousing and other overhead and handling charges.

When you can get genuine replacement springs so easily and so quickly, why run risks with mongrel springs? Write today for price list and names of the nearest distributors.

DETROIT STEEL PRODUCTS COMPANY
2272 East Grand Boulevard
DETROIT MICHIGAN

DETROIT SPRINGS
For Replacement

BUILT TO THE CAR MAKERS' SPECIFICATIONS

BROWN-LIPE GEAR CO.

This Trade Mark stands for Twenty-five Years' Leadership in making Automotive Transmissions, Clutches and Controls.

Quick Service on Parts

You get instant action on BROWN-LIPE replacements for

Transmissions, Clutches and Controls

when your order includes *Serial Number* of unit as well as full particulars regarding the part or parts desired.

Serial Numbers are stamped on Brown-Lipe Gear Co. units, and are located as follows:

Unit Power Transmissions—On the forward, top side of case, to left of center and either under or immediately in front of cover; also on top of cover, near the left edge.

Main Frame Transmissions—On top surface of rear supporting arm; also on top of cover near this arm.

Clutches—On top of boss for left side of release shaft.

Controls—For unit power models, on top of cover, near center.

For main frame models, on edge or top of bracket.

If the *Serial Number* has been painted over, remove the paint, so that there can be no mistake about any figure.

BROWN-LIPE GEAR CO.

SYRACUSE, N. Y.

SAN FRANCISCO CHICAGO DETROIT NEW YORK LONDON, ENG.

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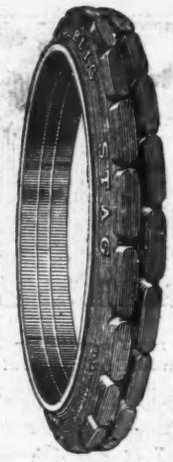


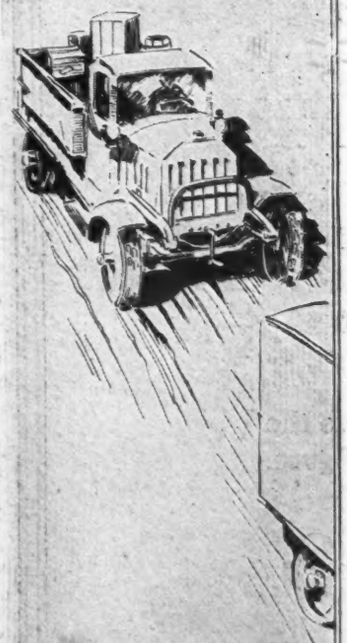
The Stag Solid Pneumatic Truck Tire

6 Good Reasons for equipping your trucks with Republic Stags

1—The air chamber gives the resiliency of a pneumatic tire.

2—The steel base has full contact with the rim at every point.

3—The Republic Staggard tread provides real traction and non-skid protection.



4—Proven through tests and Service a low cost-per-mile truck tire.

5—Fits any type of wheel using ordinary solid tires.

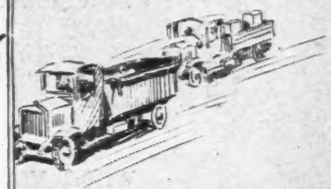
6—Distributors who stock them have the advantages of Republic's certified service.

Send for descriptive circulars

THE REPUBLIC RUBBER COMPANY
Youngstown, Ohio

New York Chicago Philadelphia Minneapolis
Kansas City Cincinnati Atlanta Pittsburgh

REPUBLIC TIRES



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BOWER SAVES POWER
Mr. Engineer:—
Are you interested in mileage?
Gasoline economy depends on the unchecked flow of power to the driving wheels.
Bower Roller Bearings do not check the power flow, because they do not bind or cramp; they have separate surfaces for radial and thrust loads, so that even with a combined radial and thrust load, there is no distortion of the load carrying surfaces.
Bower Roller Bearings do not need adjustment.
BOWER
ROLLER BEARING CO.
Detroit · Michigan
CARRIES the LOAD
TAKES the THRUST

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Walker Electrics operate at lowest cost on city routes. Carroll Ice Cream deliveries prove it every day in Chicago.

TRUCK dealers—are you watching the signs—how electric trucks are replacing gas trucks on city routes in cities of 50,000 population and upward where electric trucks are represented?

Do you realize that it usually costs 50% to 100% more to operate gas trucks than electric trucks on city routes?

Walker Electric Truck Dealers can earn more net profit, are more satisfied and have brighter prospects of future business. Why? Because about 80% of Walker orders are ***repeat orders.*** Briefly that tells the whole story.

There are still a few desirable territories open to high-grade, responsible dealers. We will be pleased to submit additional facts regarding Walker Dealerships upon receipt of your inquiry.

WALKER VEHICLE COMPANY, Chicago

LEADING MANUFACTURER OF ELECTRIC STREET TRUCKS

New York Boston Philadelphia Buffalo
Newark Atlanta New Orleans

Load Capacities: ½—1—2—3½—5 tons

WALKER ELECTRIC TRUCKS

LOWEST TRUCKING COST ON CITY ROUTES

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Consider the Electric Truck

as a means of cutting delivery costs

A great deal of attention is being paid to transportation problems by manufacturers and merchants at the present time. This is especially true of those who have a large local delivery. To them the question of economical delivery is of the utmost importance.

The increasing popularity of the electric truck and the ever-increasing number of firms that use it indicate that the electric truck has been the solution of this problem. A very conservative estimate shows that about 80% of the city traffic could be economically handled by electric trucks. And, further—it has been demonstrated that the same work can be done much cheaper.

The electric truck has a varied, yet almost universal field of performance. A few of the applications on which it is being used extensively today are: Department stores, laundries, bakeries, dairies, ice cream and beverage manufacturers.

You should investigate the electric truck as a means of saving money and rendering better service.

You will use electric trucks because of their year-round reliability, economy, ease of operation, simplicity of construction and long life.

Use electric trucks equipped with Westinghouse motors and controllers. They have demonstrated their reliability in actual operation.

Westinghouse Electric & Manufacturing Company
East Pittsburgh **Pennsylvania**

Westinghouse

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Warford

AUXILIARY TRANSMISSION

Quickly Installed. Light weight. No change in Ford design. Everything supplied.

Timken bearings. Nickel steel gears. Vanadium shafts. Aluminum housing.

6 speeds forward. UNDERDRIVE that makes Ford low speed even more powerful. OVERDRIVE that gets road speed without excessive engine speed. All of this Warford does for the Ford truck, making it into a full-fledged 2-ton hauling unit, at a FRACTION of the cost of any truck that compares in capacity, speed, or long life.

Warford puts Ford dealers legitimately into the whole 2-ton field. Our proposition is important to you. Write.

THE WARFORD CORPORATION, 44 Whitehall St., New York

AUBURN, N. Y., Foster-Warford Company

BALTIMORE, Auto Accessory Association, 26 S. Greene Street

CANTON, OHIO, Dine-DeWees Company, 400 Walnut Ave., S. E.

DALLAS, Houdaille-Polk Co. 2218 Commerce Street

DAVENPORT, Ia., Sieg Company

DENVER, Motor Specialties Company, 17 W. 13th Avenue

MEMPHIS, Continental Body Co., 476 Union Ave.

MINNEAPOLIS, McGee-White Corporation, 1311 Hennepin Ave.

NEW YORK, Motive Parts Corporation, 796 10th Ave.

SAN FRANCISCO, Warford-Pacific Co., 1111 Post Street

STOCKBRIDGE, MICH. Transmission Sales Company

VANCOUVER, B. C., E. W. Jay

WICHITA, KANS., Price Auto Service Co., 301 S. Topeka Ave.

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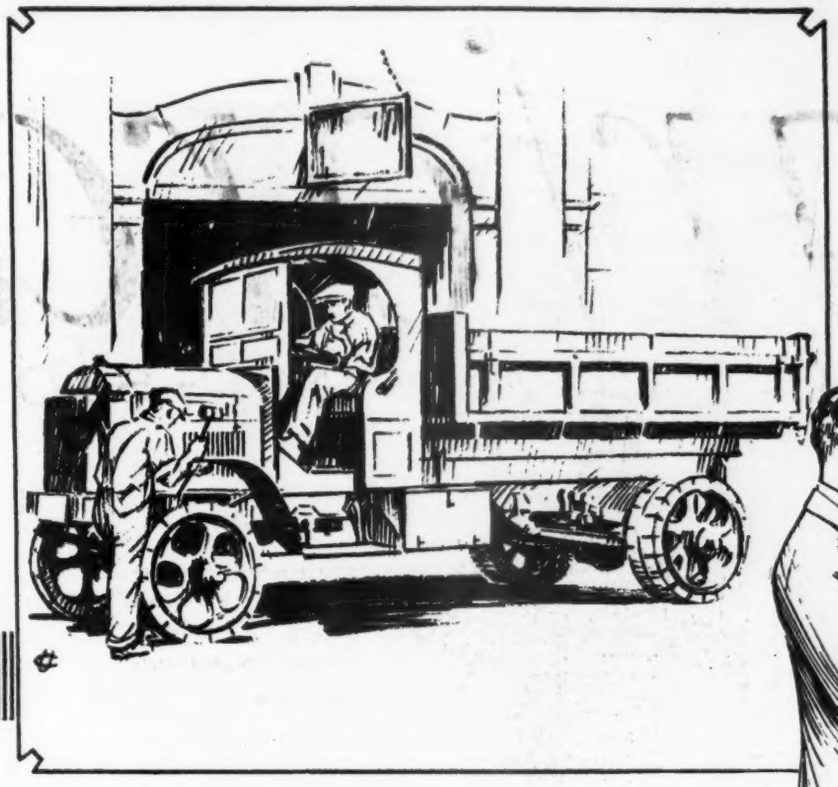

AMERICAN-LAFRANCE
COMMERCIAL TRUCKS

Truck Driver: _____ "No matter how carefully I drive, my mud guards are bent all out of shape, and they are cracked from being straightened so many times."

American-LaFrance Engineer: _____ "The mud guards on American-LaFrance Commercial Trucks are of heavy gauge pliable sheet steel. They can be straightened readily without cracking."

Remember the name—American-LaFrance
It means more than just a motor truck

AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

COMMERCIAL TRUCK FACTORY
BLOOMFIELD, N. J.

NEW YORK OFFICE
FISK BLDG., BROADWAY AT 57TH ST.

FIRE APPARATUS FACTORY, ELMIRA, N. Y.

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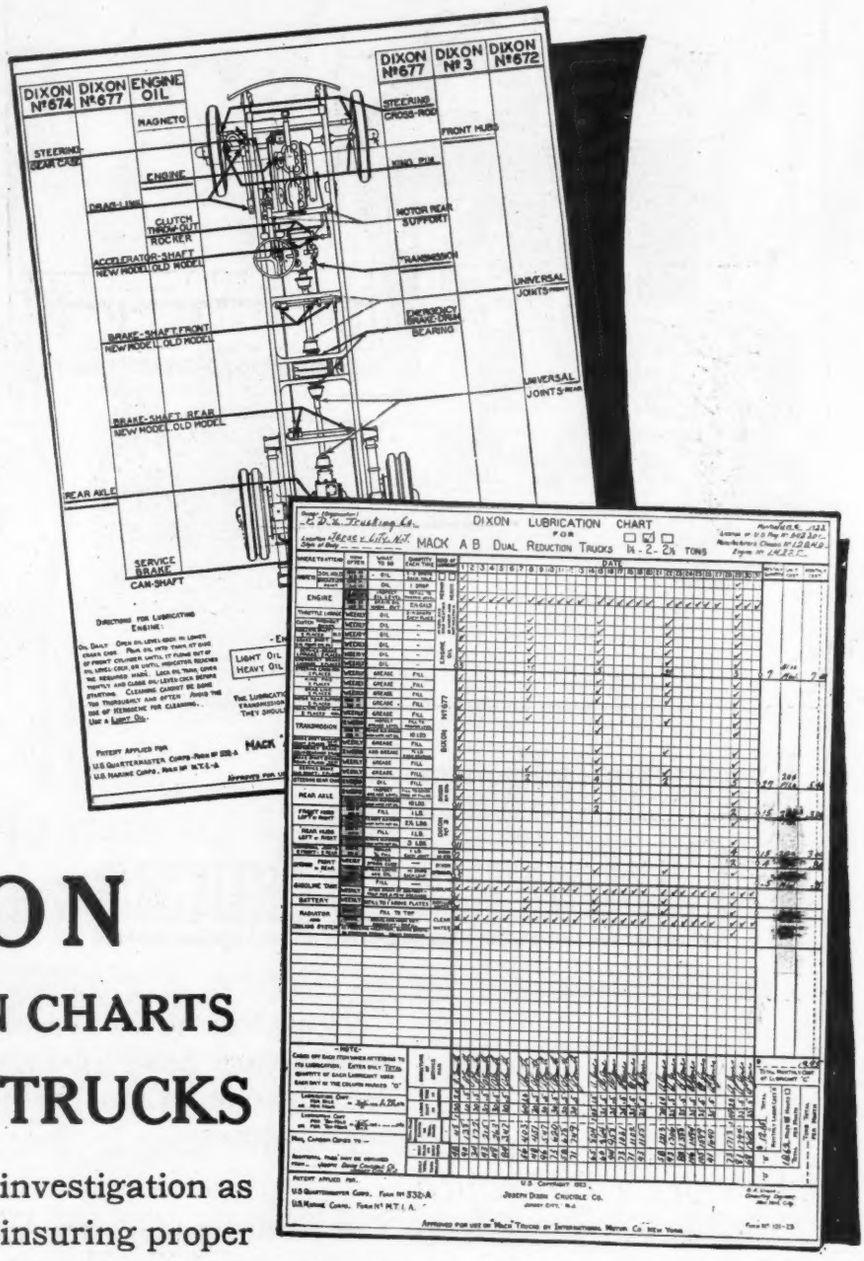

DIXON

LUBRICATION CHARTS

FOR MACK TRUCKS

are the result of long investigation as to the best method of insuring proper truck lubrication. They have been prepared for three models; "A. B." Dual Reduction, "A. B." Chain Drive, and "A. C." Chain Drive.

A comparison of the actual lubrication cost obtainable with these charts, with the mechanical maintenance cost clearly demonstrates the fact that a properly lubricated vehicle will show a much lower maintenance cost than one which has not been so attended to.

JOSEPH DIXON CRUCIBLE COMPANY

MAKERS OF QUALITY LUBRICANTS

JERSEY CITY NEW JERSEY

ESTABLISHED 1827

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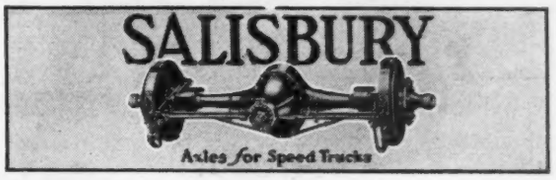

BY acquiring and utilizing the products of other men's minds —their inventions and specialized knowledge—Andrew Carnegie developed a wide reputation and market for the steel he produced.

By embodying in the car or truck you build the specialized engineering represented in Spicer, Sheldon, Parish and Salisbury parts, you put *known quantities* into its construction, add prestige to its name and, as did Carnegie, develop a wide reputation and profitable market for your product.

Parish Mfg. Corp., Reading, Pa., and Detroit, Mich.
Sheldon Axle and Spring Co., Wilkes-Barre, Pa.
Salisbury Axle Company, Jamestown, N. Y.
Spicer Mfg. Corporation, South Plainfield, N. J.

C. A. DANA, *President*

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ZENITH CARBURETOR

Veteran

Mitten Traylor

Buses Require Certainty and Economy

Motor bus operation must, first of all, be dependable—schedules must be maintained.

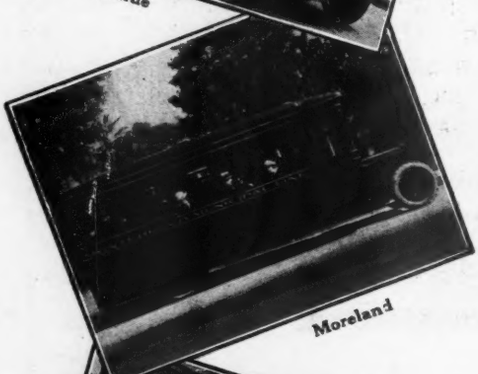
Second only to dependability is economy, for profits come wholly from operation.

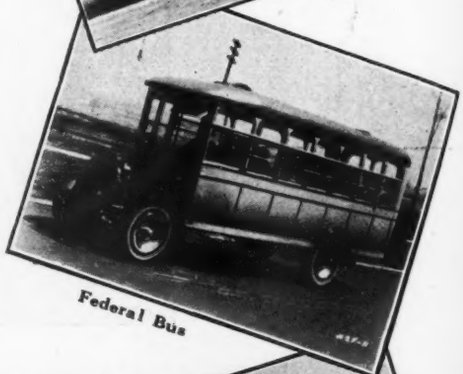
That is why Zenith is first choice in this field.

Of 68 bus models listed in the Power Wagon Reference Book, Zenith leads all other carburetors, and nearly equals all others combined. Considering number of buses produced, the Zenith lead is still greater.

Fifth Avenue

White Bus


Moreland


Federal Bus

Zenith-Detroit Corporation

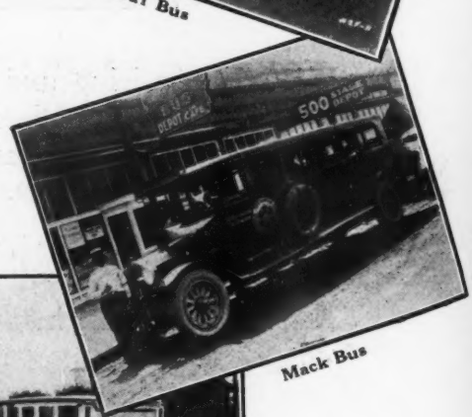
Manufacturer of

Zenith Carburetors

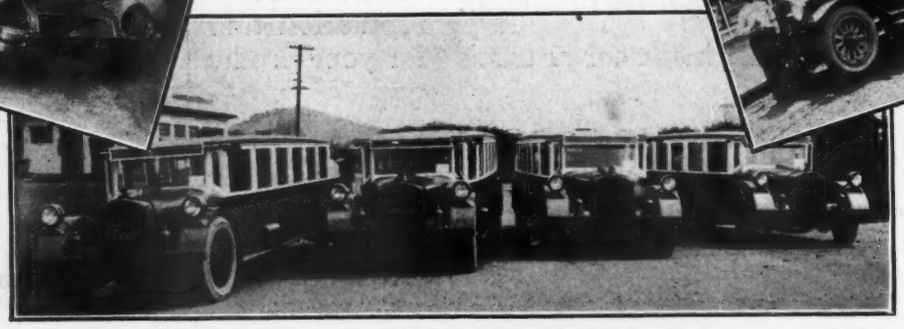
Detroit, Michigan

New York Cleveland Chicago

Defiance Royal Coach


Mack Bus

Fageol Safety Coach



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The United

Suburban Special

The Greyhound of the Highway

IN offering this new United Suburban Special, we do so with the firm conviction that in it we have come as near to producing the ideal motor coach as it is possible to do.

Each feature of design and every unit of chassis and body was adopted only after a long and careful study of the field and its requirements.

Powered by the time-tested United engine, on a wheelbase of 173 inches, the Suburban Special offers rapid and dependable highway transportation coupled with the comfort and luxury of the Pullman parlor car.

By its complete equipment, beautiful finish within and without, and the incorporation of every detail that would add to the comfort and convenience of its passengers, this coach invites patronage and marks a great forward step in suburban travel.

Write for descriptive circular and specifications.

The United Motors Products Company

GRAND RAPIDS, MICHIGAN

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The BUCKEYE Line

The most complete line of jacks in the world. Made in one of the largest plants devoted exclusively to jack production.

It is Better to Carry a Single Line of Jacks

with the variety and reputation for quality of *Buckeye,* than to carry jacks selected from various lines. Concentration on the Buckeye line keeps your investment at a minimum, permits consistency in selling customers, insures buyer satisfaction and marks your establishment as the Buckeye center of your locality. Put all your sales effort behind Buckeye Jacks, where it will give the biggest and most lasting results. We will gladly furnish you with information and terms.

5-ton Automatic Lowering

2½ tons Ratchet

10-ton Telescopic 23½" lift

10-ton Automatic Lowering

3½-ton Ratchet Extension Top

3, 5 and 7½-ton Gear and Ratchet

5-ton Adjustable

These illustrations show the wide variety of Buckeye Truck Jacks. We guarantee the workmanship and capacity of every one of them.

All castings of malleable are made in our own plant. All other parts are of the same highest quality.

We supply repair parts for all jacks.

THE BUCKEYE JACK MFG. CO.
ALLIANCE OHIO

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Do All Your Prospects Use Five-Ton Trucks?

It would be equally sensible to ask if they all used dump-body trucks, or oil-tankers, or milk trucks.

Have you thought of the benefit to you of representing a manufacturer building a complete line and engineering every truck sold to the user's requirements?

GARFORD Dealers profit by this advantage. They have a legitimate appeal to prospective buyers in every field of haulage because GARFORD manufactures trucks from 1 to 7½ tons.

Moreover they are backed by GARFORD Engineers who have intensively studied haulage conditions in over 90% of American industries. Their expert analysis and recommendations are available to you to offer your customers without charge.

They know specifically not only the size of equipment that will give the best results, but the right body, no matter how highly specialized the haulage problem a customer faces.

Let us tell you how GARFORD Dealers profit by this and other far-sighted policies. Write us.

The Garford Motor Truck Company, Lima, Ohio

Makers of Motor Trucks and Motor Coaches

GARFORD

DEPENDABLE TRANSPORTATION

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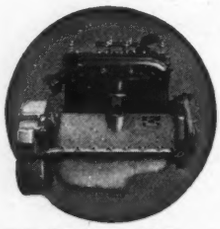
A Brown Motor Coach built by the Brown Truck Company, Duluth, Minnesota

When Buda dependability means the most

In such a service as the transportation of children to and from school, where every moment counts; where the slightest delay means a serious disarrangement of schedule and a big loss in dollars and cents; where operating costs must be held down to the minimum, the Buda engine is most appreciated. That's why the Brown Truck Company power their school buses with the Buda engine; why so many other motor coach builders have standardized on Buda; why shrewd operators now insist on Buda-equipped units.

The Buda reputation means as much to the man who sells trucks as Buda dependability does to the man who uses them. It's an "Open Sesame" to quick sales.



BUILT FOR A PURPOSE

THE BUDA COMPANY, HARVEY CHICAGO SUBURB ILL.
ESTABLISHED 1881

Buy only genuine Buda Parts for the Buda engine
New Parts Catalog No. 402 is now ready

BUDA
The
ENGINE

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Book of Samples FREE

Test It Yourself

We do not ask you to take anyone's sayso about the use of Genuine Keratol for upholstering.

It's beauty of finish; its pliability; its rugged resistance to wear and hard usage; its stain-proof, grime-proof surface; the wide variety of colors and grains—see them all for yourself.

Send the coupon in the corner for a generous book of samples.

Rub them between your fingers. Pull and twist them. Pound or try to scuff them. Smear them with dirt—or mud—or grease.

You are the judge. You have the final say.

Clip and sign the coupon NOW. Find out how Genuine Keratol adds value, appearance and salability to your product—at smaller costs that mean more profits. Don't delay these profits.

Clip and Sign the Coupon Now

This Coupon May Save You a Month's Profit This Year

THE KERATOL COMPANY
Dept. 107 NEWARK, N. J.

Without obligation, please send me your FREE sample book, so I can see and test Genuine Keratol for myself.

Name .....

Address.....

.....

IT'S not surprising that the combination of U.S. Mono-Twin on the rear wheels and U. S. Cushion Tires on the front is becoming a familiar equipment in heavy trucking.

In the U.S. Mono-Twin the truck owner gets a tire that distributes the weight of the load safely over a wide road surface — a tire that meshes its way powerfully over any ground—a tire that piles up a high mileage.

In the U.S. Cushion he gets a tire that approaches the pneumatic in cushioning qualities, steers easily, protects the truck and the load from damaging jolts and delivers an enormous money's worth in long wear.

United States Truck Tires

United States Rubber Company

U. S. Rubber Co., N. Y.

The value of a GMC franchise to any motor truck dealer is well set forth by the fact that in the last year GMC sales have increased more than 90% over that for the previous 12 months' period.

This is due in no small measure to the new and better motor truck transportation which has been provided by the exclusive features of GMC design and construction, and by the fact that these features have resulted in a country wide disposition of the buyers of motor trucks toward GMC equipment.

There is an opportunity for a GMC dealership in every city and town in the United States where GMC trucks are not now represented.

GENERAL MOTORS TRUCK COMPANY – *Pontiac, Michigan*
Division of General Motors Corporation

General Motors Trucks

GMC

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THE SPRING IS THE THING

Mather Springs
Scientifically
Heat Treated

The
Mather Spring Co.
Toledo~Ohio.

MATHER SPRINGS

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Straight line power— *from engine to rear axle*

How the fanwise construction delivers it without jolts, jars or vibration

THERE is no longer any reason for a shaft being out of true several times per revolution. Delicate gears and bearings in the transmission and rear axle can now be cushioned and protected from unnecessary vibration.

The fabric disc of Fanwise Construction eliminates the jars and jolts of the racking metal universals—it holds the propeller shaft true because it balances every stress.

Notice below the patented Thermoid-Hardy Fanwise Construction. The strands of each layer of fabric run in a different direction. Strain it from any angle—each sector is of equal strength and flexibility. This means the end of vibration—it eliminates "whipping."

The diagram at the left (illustration below) shows an ordinary disc, its layers of fabric laid parallel. Note that the left hand bolt is the *only* one that can pull *with* the cotton strands—the other two pull *across*, stretching the disc out of true and causing vibration of the entire shaft.

Cushions every shock— needs no adjustment

The Thermoid-Hardy disc has remarkable elasticity. Added to this is a ruggedness which withstands the jarring blows of the roughest roads. The Thermoid-Hardy Joint is good for over 60,000 miles on the heaviest trucks—without lubrication or adjustment!

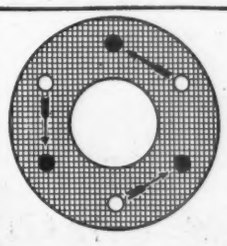
The Fanwise Construction keeps it going long after the ordinary universal has racked or pulled itself apart.

Thermoid-Hardy discs are now packaged for distribution through jobbers and dealers for replacement sales. Full information, prices, and discounts sent on request.

A book you should have

We have prepared a book, "Universal Joints—Their Use and Misuse," that treats the subject from every angle — the mechanical principles, construction, lubrication, manufacture, strength, tests, and records of performance. Send for your copy today.

THERMOID RUBBER COMPANY
Sole American Manufacturers
Factory and Main Offices, Trenton, N. J.
New York, Chicago, Los Angeles, Atlanta, Detroit, Seattle, Kansas City, Boston, Cleveland, San Francisco, London, Paris, Turin.



At left is an ordinary fabric disc, its layers of fabric laid parallel. The three black holes are the driving bolts—the three white ones the driven. Note that the left hand driving bolt is the only one that can pull in the direction of the cotton strands. The other two must pull on a bias. This stretches the whole disc out of true, causing vibration and "whipping" of the shaft.

Now examine the Thermoid-Hardy patented Fanwise Construction. The disc is built up with the strands of each fabric layer running in a different direction. Each sector is equally strong, equally elastic. Every stress is balanced—the torsional, the centrifugal, and the lateral. This eliminates vibration and holds the shaft in true on every revolution.

LIST OF USERS

Allis Chalmers Mfg. Co.
The Autocar Co.
Available Truck Co.
Barley Motor Car Co. (Roamer)
Chandler Motor Car Co.
Crow-Elkhart Motor Corp.
Jas. Cunningham Son & Co.
Dart Truck & Tractor Corp.
The Dauch Mfg. Co.
Diamond T Motor Car Co.
Doane Motor Truck Co.
Fageol Motors Co.
H. H. Franklin Mfg. Co.
Garford Motor Truck Co.
Gramm-Bernstein Motor Truck Co.
Hawkeye Truck Co.
Hendrickson Motor Truck Co.
Highway Motors Co.
Holt Mfg. Co.
Indiana Truck Co.
International Harvester Co. of A. Inc.
International Motor Co.
Jackson Motors Corp.
Kelsey Motor Co.
Kentucky Wagon Mfg. Co., Inc.
King Zeitler Co.
Lakewood Eng. Co.
Lexington Motor Co.
Locomobile Co.
Maxwell Motors Corp.
Menominee Motor Truck Co.
Mercer Motors Co.
Moreland Motor Truck Co.
Nelson & LeMoon

LIST OF USERS

E. A. Nelson Automobile Co.
Nelson Motor Truck Co.
D. A. Newcomer Co.
O'Connell Motor Truck Co.
Oliver Tractor Co.
Oneida Motor Truck Co.
Packard Motor Car Co.
Parker Motor Truck Co.
Patriot Motors Co.
Reliance Motor Truck Co.
Reo Motor Car Co.
Reynolds Motor Truck Co.
Root & Van Dervoort Eng. Co.
Sanford Motor Truck Co.
Southwark Fdy. & Mach. Co.
Stoughton Wagon Co.
Studebaker Corp.
Stutes Mar Tractor Co.
Templar Motors Co.
Tioga Steel & Iron Co.
Towmotor Co.
Traffic Motor Truck Corp.
Transport Truck Co.
Twin City Four Wheel Drive Co., Inc.
United Motors Co.
Walter Motor Truck Co.
Ward La France Truck Corp., Inc.
Geo. D. Whitcomb Co.
Wichita Motors Co.
H. E. Wilcox Motor Co.
Willys-Overland, Inc.
Zeitler & Lamson Truck & Tractor Co.

THERMOID-HARDY UNIVERSAL JOINT

Makers of "Thermoid Hydraulic Compressed Brake Lining" and "Thermoid Crolide Compound Tires"

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"Eaton" means Excellence

IT is generally recognized that Eaton is a synonym for excellence in axles. This is natural, considering the character of the busses and trucks that use them, and the freedom from axle trouble that characterizes these vehicles. If you could come and see us build axles, you would carry away the conviction that no safer foundation could be laid for your bus fleet than with these Eaton-built units.

The EATON AXLE & SPRING COMPANY
CLEVELAND

EATON
AXLES

An EATON PRODUCT

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Bus Operation is Profitable

The public is satisfied with motor bus service.

The number of motor buses in operation is increasing at a rate of 25% a year.

By the constructive work of motor bus operators of fleets, and sensible regulation by states, the motor bus business has become settled and established on a solid basis.

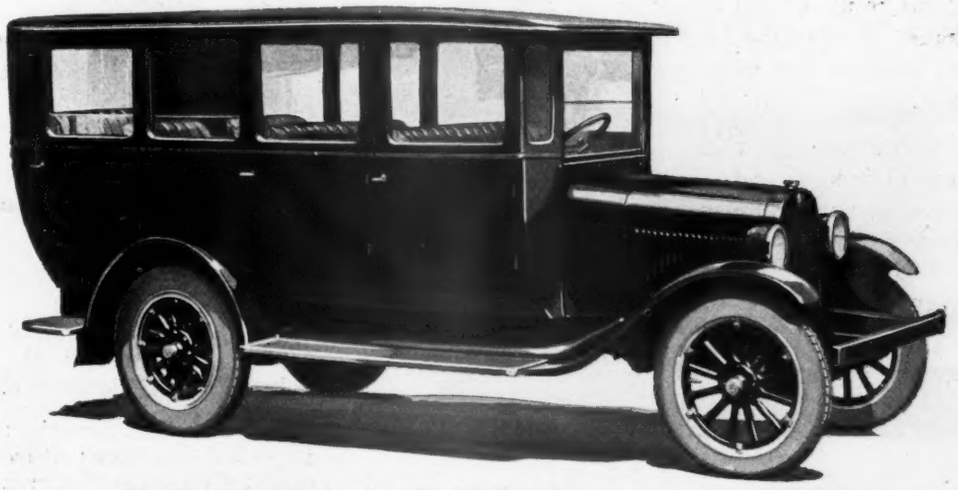
Settled conditions and intelligent operation make the passenger transportation business profitable. Our file on "Passenger Transportation" is compiled from good authorities and contains valuable information for anyone contemplating motor bus operation. We will furnish this file on request.

Graham Brothers buses have proven exceptionally profitable because the capacity is such that they show a profit whether one bus or a fleet is operated. They are known to show a low cost per passenger mile because of light chassis and body weight; ruggedness to stand up under hard road work; the well known economy of Dodge Brothers power plant; and because of low initial investment required.

Graham Brothers buses are successfully used for urban and interurban transportation, as feeders for street railway lines, and as conveyances in consolidated school districts. When writing for "Passenger Transportation" file, address main offices at Detroit.

1 Ton Chassis, $1265; 1½ Ton, $1325; f. o. b. Detroit or Evansville, Ind.

GRAHAM BROTHERS
Detroit — Evansville



We will exhibit at the American Street Railway Association exhibition in Atlantic City, October 8th to 12th.

GRAHAM BROTHERS TRUCKS

SOLD BY DODGE BROTHERS DEALERS EVERYWHERE

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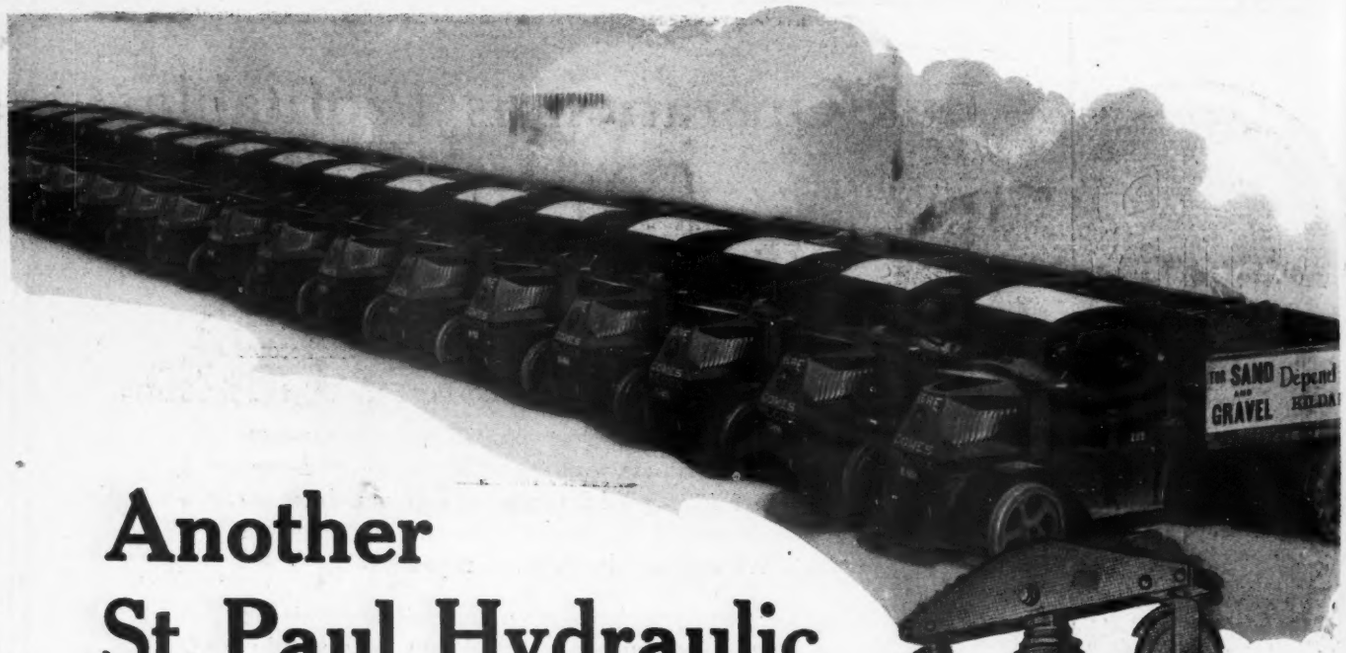


Another St. Paul Hydraulic Hoist-Equipt Fleet

A contractor's truck is no better than its hoist. That's why this fleet of thirty 5 ton Macks, in the service of the Wilcox Company, of Chicago, is equipt with husky St. Paul Vertical Hydraulic Hoists.

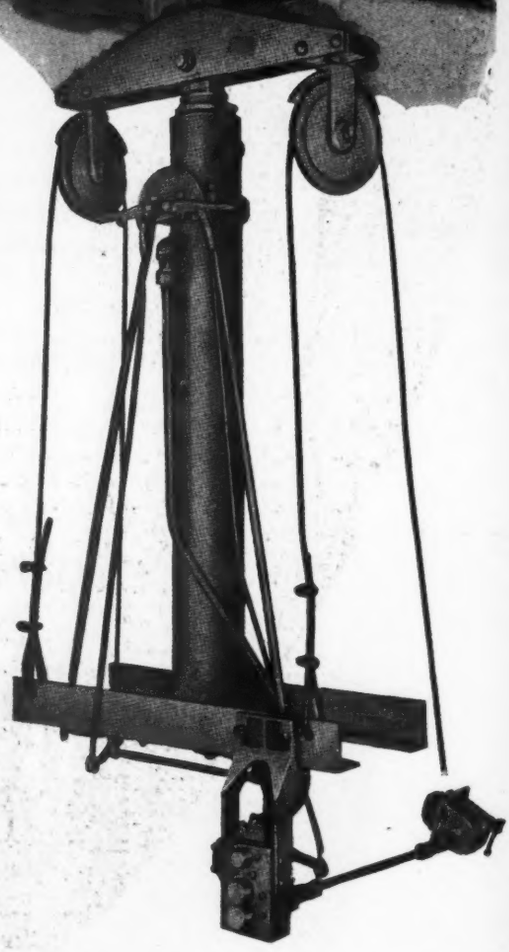
In gruelling service tests, the Wilcox Company conclusively proved to its complete satisfaction that St. Paul Hydraulic Hoists

—are thoroughly dependable.
—have ample reserve power for every emergency.
—dump loads with great speed and do not "jam."

And as a natural result of the bigger profits and business St. Paul Hydraulic Hoists have helped produce, the Wilcox Company have ordered ten more trucks—St. Paul Hoist-Equipt, of course.

Truck dealers who realize the vital part played by efficient dumping equipment in helping to sell trucks to contractors, will do well to ponder on the preference these big fleet buyers show for St. Paul Vertical and Underbody Hydraulic Hoists.

DISTRIBUTORS AND SERVICE STATIONS EVERYWHERE



This St. Paul Vertical Hydraulic Hoist in two sizes: 5″ for 3 ton trucks or less; 6″ for 3½ ton and over.

Underbody Type in three sizes: 5″ for ¾ to 1½ ton trucks; 6″ for 3 ton or less; 8″ for 3½ ton and over.

HYDRAULIC HOIST MANUFACTURING CO.
ST. PAUL ..... MINNESOTA

St. Paul
VERTICAL AND UNDERBODY
HYDRAULIC HOISTS

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Questions to ask when you buy truck tires

When you go to buy truck tires, ask the salesman these questions:

Will your tires give plenty of traction?
Will they provide ample cushioning for my truck?
How much mileage will they give?
What do they cost?

Traction, resiliency, mileage and low cost are the four qualities that a truck tire should have. Do not buy a tire that fails to give you any one of these qualities. You can get them all in Kelly Kats.

Kelly Kats are able to get traction without chains on nearly any kind or condition of road. They are practically as resilient as properly inflated pneumatics and are a cushioning agent for most trucks because they are not subject to punctures or blowouts. They will deliver long, economical mileage in spite of severe punishment—and do it at a very low cost per mile.

The more exacting a truck owner is in buying tires the surer he is to decide on Kelly Kats for his heavy and medium capacity trucks.

There are no Caterpillar tires but Kelly Kats

KELLY-SPRINGFIELD TIRE COMPANY
250 West 57th Street, New York, N.Y.

KELLY KATS

THE TIRES WITH NINE LIVES

BESSEMER

The Truck that Made Good in Mud

5 SIZES and CAPACITIES

Bessemer Deals Direct With Dealers

Eliminates the middle-man. Gives the dealer a distributor's discount.

Gives a direct dealer-factory contract.

Bessemer Sales Scout Service helps the dealer sell.

Bessemer Trucks are second to none. Rugged, sturdy brutes, built originally to run up *mileage in mud* in Pennsylvania oil fields. They're *still* built to give years of service where roads are ruts. They stand up in service that takes the heart out of most trucks.

BESSEMER MOTOR TRUCK COMPANY

Motor Truck Division, Bessemer-American Motor Corporation

GROVE CITY, PA. **PLAINFIELD, N. J.**

Eleven Successful Years Building Fine Trucks

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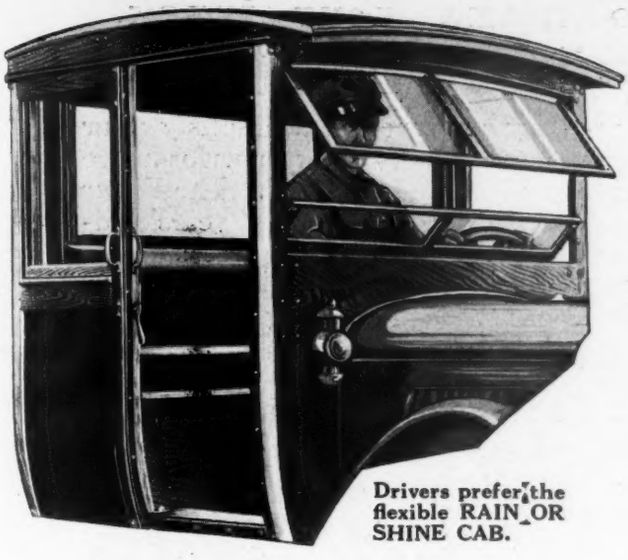
Consider the Driver!



Drivers prefer the flexible RAIN OR SHINE CAB.

He Often Makes or Breaks the Truck Sale

The driver's opinion is often the deciding factor that tips the scales in favor of—or against—purchasing the motor truck you manufacture.

Make an active ally of the driver. Cater to his comfort. Keep him cool in summer and warm in winter. Shelter him from inclement weather. Deliver him from jolting sidesway and nerve-tiring vibration.

Yes, you can do all this — by equipping your truck with the distinctive RAIN OR SHINE CAB.

Its perfectly balanced wood and steel construction is non-conductive to heat and cold. Its correct design provides ample ventilation in summer, comfort in winter, positive protection in stormy weather. Its flexible units readily absorb sidesway and vibration.

And it is unqualifiedly guaranteed to stand up in service.

Consider the driver—and make truck sales much easier for your dealers.

Include the RAIN OR SHINE CAB in the specifications.

Distributors

The RAIN OR SHINE CAB *Distributorship becomes daily more valuable —and scarce. Write for complete details.*

General Woodwork Corp.
Cincinnati Ohio

RAIN OR SHINE TRUCK CABS

Guaranteed To Be Replaced If They Do Not Hold Up In Service

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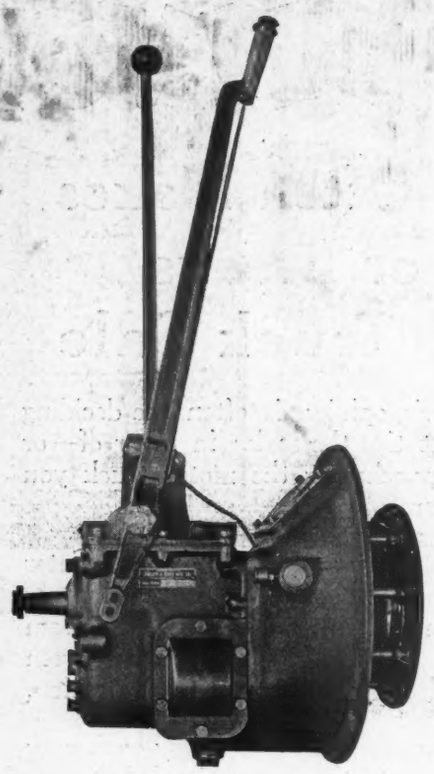


A Standard Unit

that will do its full share to make your truck *Reliable and Salable*

Fuller quality construction will satisfy your most rigid requirements so far as performance and upkeep costs are concerned. The Fuller reputation, based on nineteen years' adherence to quality standards, will support your truck's standing as a quality product, and do its full share in deciding sales.

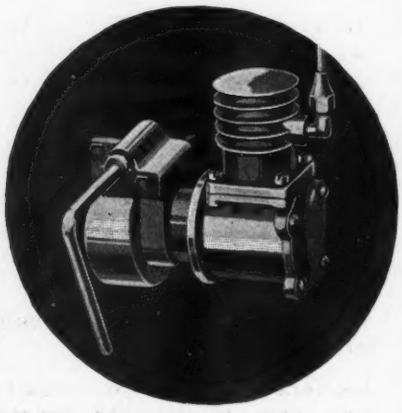
Write for detailed information.

Fuller & Sons Mfg. Co., Kalamazoo, Mich.

FULLER Transmissions

Every MOTOR BUS *Should be Equipped With*

WIZARD *Engine-Driven* TRUCK TIRE PUMPS



Wise foresight demands its installation on all pneumatic-equipped motor buses and trucks; for tire trouble may come when they are miles from the nearest air station—WIZARD gives them full pressure *on the spot.*

WIZARD

VALVELESS

ENGINE-DRIVEN TIRE PUMPS

FOR BUSES AND TRUCKS WITH PNEUMATICS

Fits All Standard Transmissions

Dealers and makers who equip their trucks and buses with pneumatics will find it pays to install a WIZARD tire pump. Every *unit* that will keep trucks and buses on the job, and close to schedule, *will help make sales.*

Plenty of Pressure for a 42 x 9

Make the fact that WIZARD is *built for buses and trucks* and can stand bus and truck usage, a selling feature. Write us for detailed information on WIZARDS.

Continental Pneumatic Equipment Co.

8030 S. Chicago Avenue **Chicago, Ill.**

You, Too, Might be Overlooking a Good Bet!

Sometimes the hardest dealers to sell are the best dealers. They naturally turn a deaf ear to some of the newer propositions until they are more firmly established.

But please remember, the Duplex Truck Company is not new. We are one of the oldest truck companies in the country.

One of our latest designs is a one-ton job, and believe us, if you are looking for a ready seller — goods that move off your floor quickly and profitably—you had better get all the facts about this new truck.

It's a crackerjack in every respect. There is a market for it, which you do not have to create—it's already created for you.

Fits any business and is as necessary to most businesses as the telephone.

It is not necessary for you to do any creative work. The market is here, and unless you are taking advantage of it, you *are* overlooking a big bet.

When it comes to well-known units, here are a few:

Buda motor	Modine-Spirex radiator
Brown-Lipe clutch and transmission	132-inch wheelbase
Timken axles	33 x 5 Pneumatic cord truck tires

Prices right, too. Good sized production makes this possible.

Dealers all over the country are creating new sales records with this new one-ton job.

Write, or better yet, wire us today. It will pay you to get all the facts.

Duplex Truck Company
Lansing Michigan

DUPLEX
BUILT
FOR BUSINESS

DIETZ "SENTINEL" Electric Headlights are now lighting the highways for the following makes of Motor Trucks. The list is growing fast!

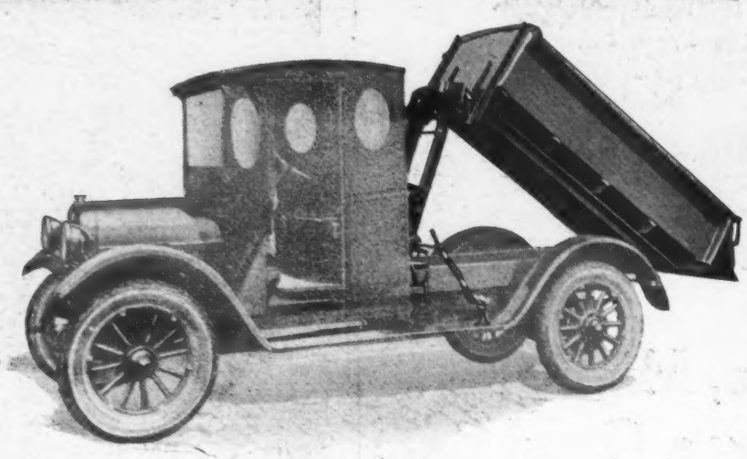
TRUCKS OF THE UP-TO-THE-MINUTE MEN

Acme
American-La France
Armleder
Atterbury
Bessemer
Betz
Bridgeport
Brockway
Buffalo
Columbia
Concord
Clydesdale
Corbitt
Day-Elder
D-Olt
Denby
Diamond T
Federal
Gary
Hendrickson
Hurlburt
Kearns
K-Z
Kelly-Springfield
Kleiber
Krebs
Linn
Maccar
Moreland
Old Reliable
Parker
Power
Rainier
Sandford
Schacht
Schwartz
Service
Signal
Standard
Stewart
Triangle
Tower
Ultimate
United States

They're Better Lamps! That's the Reason!
Profitable for Dealers! Send for Literature

R. E. DIETZ COMPANY
60 LAIGHT STREET, NEW YORK
Pioneer Makers of Vehicle Lamps. *Founded* 1840
JAMES BARNES, Sales Manager, Motor Truck Lamp Department, Carter Building, ROCHESTER, NEW YORK

DIETZ "SENTINEL"
ELECTRIC·HEADLIGHTS
FOR·MOTOR·TRUCKS

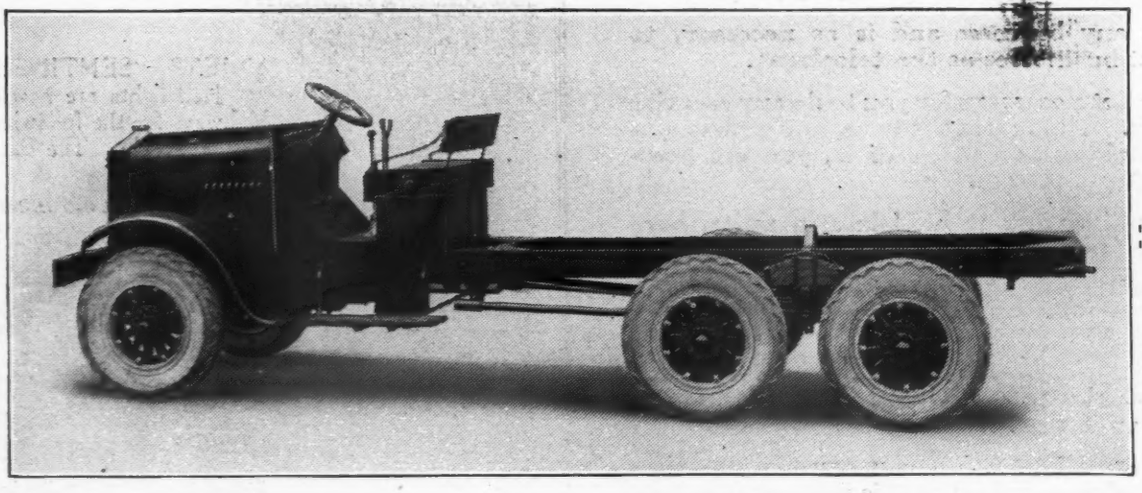


Galion Construction—

Galion bodies are practically rivetless—electric welding being much stronger. Ten gauge metal is used to give much greater strength than is actually necessary in ordinary use.

The Galion Allsteel Body Co.

Galion, Ohio



Dealers–It's Easy to Sell This Super Truck

Know All the Exclusive Selling Features. Write

SUPER-TRACTION Wisconsin TRUCKS

To enumerate just a few of this great truck's exclusive selling features:

The four rear drive wheels have much greater traction-ability—under all road conditions—than traction members of any other truck. More efficient starting and stopping traction—particularly on slippery or rough roads.

It costs $300 to $500 less to re-tire than any similar sized four-wheel truck. This is due to smaller size of tires.

Greater tire mileage, because of better, wider and equalized distribution of weight.

Super-Traction Company

214 M & M Bank Bldg. Milwaukee, Wisconsin

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POWER

for Heavy Hauling in Hilly Country

Mack, Packard, Graham Bros. and Garford Dealers will not only make additional profit for themselves, but also do their customers a genuine service, by equipping their trucks with the Ahlberg Dual Transmission. It doubles the number of transmission speeds that the truck already has by introducing two extra gears which reduce gear ratios 62½%.

With it a truck user not only has a truck that will give him better service than he had before, but also one that permits him to run continuously at more economical engine speeds. This reduces running expense, and eliminates the vibration due to speeding up his engine that costs him so much in wear and tear.

The price of the Ahlberg makes for steady sales, and yet pays you a worth-while profit. Write us about it.

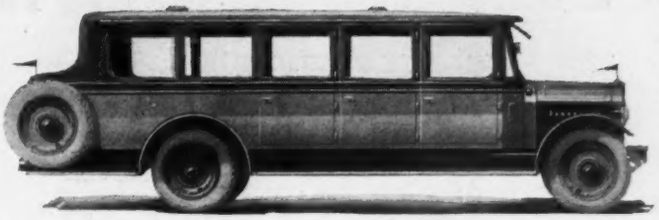
K. E. AHLBERG CO.

120 W. 22d Street **Los Angeles, Cal.**

AHLBERG

DUAL TRANSMISSION

for Packard—Mack Graham Bros.—Garford Trucks



Beauty, Comfort Safety and Profit Combined With Low Cost and

ECONOMICAL OPERATION

The Triangle Coach offers to the dealer a specially designed unit fitted exactly to the requirements of its work—one that has the beauty to command patronage and the capacity to yield profit—at a cost that makes sales possible on a scale heretofore impossible.

The bus chassis incorporates the correct principles of design and construction that have made ***Triangle*** trucks so uniformly and permanently satisfactory; and the body—the product of the Michigan Body Corporation, of St. Johns, recognized throughout the industry as leaders in bus body development—follows the lines proved best for successful bus operation.

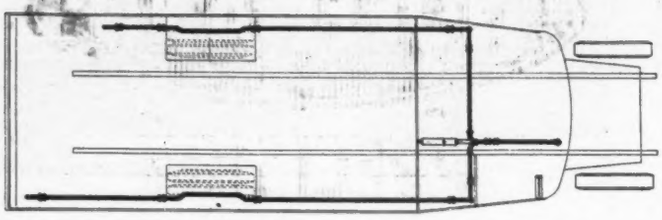
We shall be glad to send details of construction and of our money-making proposition, to interested dealers

Triangle Motor Truck Co.

St. Johns **Michigan**

Also Builders of ¾ to 3 Ton Trucks

Consider Next Winter's Profits NOW!



YOU can't expect to do a good winter's business if your buses aren't properly heated. The popular money-making buses are the well heated ones. And for heating a bus better, easier, and more economically the PETRY offers more than any other bus heating system.

Features

Ample Heat. Low-priced complete system. Seamless steel tubing.

Smooth joints and angles. Clothing guards.

No odors. No smoke. No danger to passengers.

Some Users

Ace Motor Co.
Camden County, N. J., Bus Association.
Fifth Avenue Coach Co.
International Harvester Co.
International Motor Co. (Mack)
Phila. Rapid Transit Co. (for Buses)
Yellow Coach Mfg. Co.

The first step in assuring good steady business and profits this coming winter is to write us today for information about the Petry Bus Heating System.

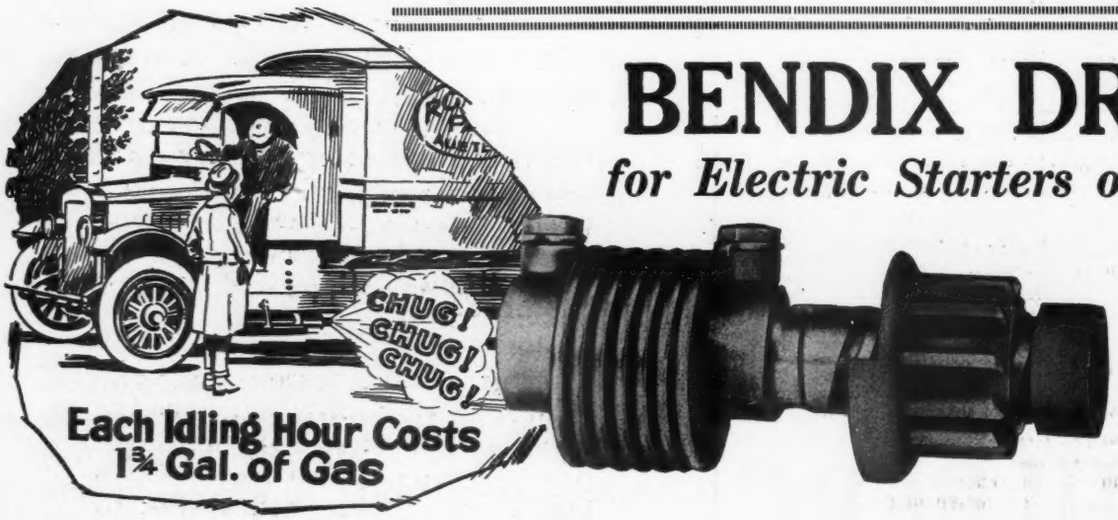
You and your mechanics will at once appreciate the superiority of the Petry system. You'll like the easy way in which it is installed; the way it protects your passengers; and best of all, the fact that the Tuning-Up Valve helps you keep the engine in fit condition the year round.

Each Petry system is "tailor made" for each particular bus. It's made of seamless steel tubing and is therefore lighter in weight than iron pipe systems. Special wrenches furnished. Any mechanic can install the Petry Bus Heating System.

Dictate a letter today for detailed data.

N. A. PETRY COMPANY, INC.
324 N. Randolph Street, Philadelphia, Pa.
Makers of PETRY Tuning-Up Valve, Pump, Pedal, Ventilator and Twin Lock Tire Carrier
Western Distributor: Norman Cowan Co., 445-51 Rialto Bldg., San Francisco, California

The PETRY Bus Heating System



BENDIX DRIVE

for Electric Starters on Trucks

Automatic Engaging and Disengaging

BENDIX DRIVE

As long as truck drivers must crank their engines, they will let them "idle" while standing. Each idling hour costs 1¼ gallons of gas. An hour a day costs *over $100 a year.*

Numberless engines have been ruined because an oil line, pump or radiator has clogged while their drivers left them, idling. Incalculable damage to universal joints, jack shafts and gear sprockets has resulted from drivers coasting down grade and throwing in the clutch to start.

Drivers whose trucks are equipped with electric starters *don't do these things.* The saving is the truck owner's.

Bendix Automatic Drives for electric starters are absolutely automatic—certain in action—with fewer parts than any other drive. They require a minimum of care and attention.

An electric starter, equipped with the Bendix Drive, will save every truck owner money in the savings it will effect. Let us show you.

Eclipse Machine Company **Elmira, N. Y.**

METRO

ALL-WEATHER CAB

Made in Three Sizes
50″-56″-62″ Inside Widths

The Greatest All-Weather Cab Value on the Market

METRO All-Weather Cabs are backed by fifteen years of expert, honest body-building. They *are* better!

Maximum Clear Vision

Comfortable cushions and lazy-back seat the driver at just the right angle for safe driving.

Ample leg, head, elbow and body room.

Superior design, workmanship and materials.

Only the best straight-grained hardwood used in wood construction.

Blue annealed sheet steel dash, back and panels.

Sliding doors, drop sashes—limousine type.

All windows let down on sides and rear, making a real open cab for warm weather and a real closed cab for cold and stormy weather.

Standard interchangeable parts for quick repair or replacement.

We offer a profitable plan and close co-operation to

☐ TRUCK MANUFACTURERS
☐ TRUCK DEALERS
☐ BODY BUILDERS
☐ BODY DISTRIBUTORS

Local Service Provided. Inquiries Welcomed

The Metropolitan Body Co.

BRIDGEPORT, CONN.

MANUFACTURERS

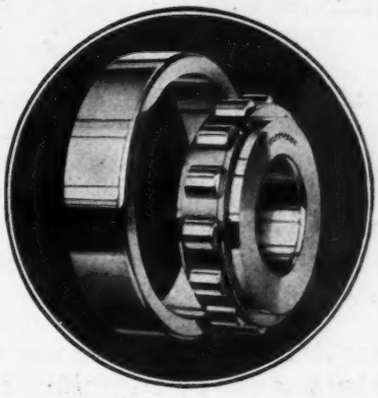
DUMP BODIES · RACK BODIES · OPEN CABS
ALL-WEATHER CABS

Count the METROS Up Ahead

STANDARD THE METROPOLITAN BODY CO. TRUCK BODIES

HOFFMANN

PRECISION ROLLER BEARINGS



For Heavy Loads and Hard Service; Standard and Self-Aligning Types

Heavy-duty units built to the highest standards of precision; affording maximum serviceability under conditions involving heavy loads, temporary overloads, shock, jars and vibrations; offering new opportunities for power saving and reduced upkeep costs.

Our engineers will welcome an opportunity to work with yours, in the application of these high-duty high-precision bearings to motor buses and motor trucks, with a view to securing maximum anti-friction efficiency, minimum maintenance costs, and continuity of service.

THE NORMA COMPANY OF AMERICA

Anable Avenue
Long Island City New York

MAKERS OF "NORMA" PRECISION BALL BEARINGS

Did you know that—

the new Atterbury trucks are built in four sizes—1½, 2½, 3½ and 5 ton capacities.

the new Atterbury trucks have the latest type Continental motors—Models J4, K4, L4, and B2.

the new Atterbury trucks have amidship transmissions in the 2½, 3½ and 5 ton models.

the new Atterbury trucks are completely equipped with cabs, electric lights, vacuum feed and Alemite lubrication at no extra cost.

the new Atterbury trucks are the final result of our twenty years' experience in building motor trucks and nothing but motor trucks.

Those are some of the reasons why the Atterbury line and the Atterbury Factory Organization make the foundation of a permanent, increasing business, the only kind profitable over a period of years.

Write for a complete description and open territory.

ATTERBURY MOTOR CAR COMPANY
Buffalo, N. Y.

ATTERBURY
MOTOR TRUCKS OF MAXIMUM SERVICE

TWENTIETH ANNIVERSARY

EISEMANN

Type G-4 Magneto

THE merit of Eisemann High Tension Magnetos is well established in the minds of manufacturers, dealers and owners of commercial cars. Particularly, is the worth of the Type G-4 recognized and known.

The superiority of this instrument is so generally acknowledged that words can not add to its prestige. Approval has come—not by the acceptance of unsupported claims, but from the test of usage and service.

No radical change in design has been found necessary. Slight modifications have been made from time to time, but the original conception remains the same—and time has proven its correctness.

It is but natural that manufacturers of motor trucks, who give first consideration to upbuilding reputation and good will, adopt this magneto. The sales advantage of its inclusion as standard equipment accounts for the dealer's preference for it. And the user is favorable to it because of the complete satisfaction it gives.

EISEMANN MAGNETO CORPORATION
William N. Shaw, *President*
BROOKLYN, N. Y.
DETROIT CHICAGO SAN FRANCISCO

DROP FORGINGS

BACKED BY FORTY YEARS' EXPERIENCE

ANYTHING THAT CAN BE DROP-FORGED UP TO 300 POUNDS

Open Hearth or Alloy Steel Capacity, 2,000 Tons Per Month

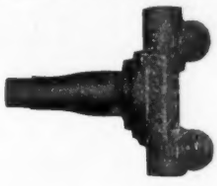
TYPICAL TRUCK FORGINGS

STEERING KNUCKLE, 28 LBS.

BRAKE SHOE, 30¼ LBS.

AXLE SPINDLE, 42 LBS.

STEERING KNUCKLE, 39 LBS



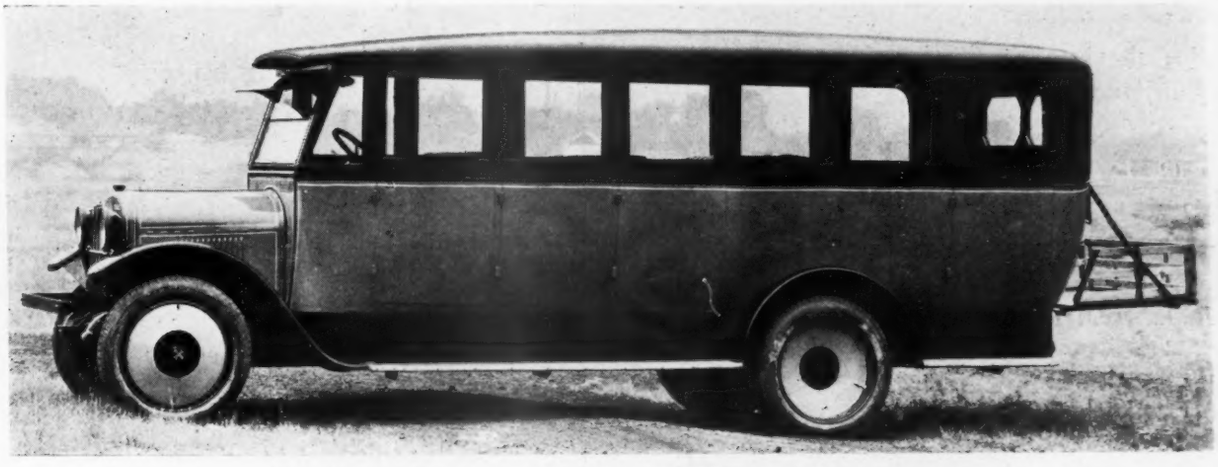
STEERING KNUCKLE, 35 LBS.

Correspondence
To Insure Prompt Attention ***Don't*** Address Letters on Company Business to Individuals

Address All Communications to
Drop Forge Department

UNION SWITCH & SIGNAL COMPANY

PITTSBURGH DISTRICT **SWISSVALE, PA.**



Comfortable Transportation for Twenty Passengers
Also made for 11, 16 and 24 passengers

TOUR-A-BUS

One or more are operated out of

Flint, Mich.	**Detroit, Mich.**	**Chicago, Ill.**	**Hannibal, Mo.**
Lansing, Mich.	**Saginaw, Mich.**	**Rock Island, Ill.**	**Portsmouth, O.**
Frankfort, Ky.	**Beckley, W. Va.**	**New York, N. Y.**	**Minneapolis, Minn.**
Wheeling, W. Va.	**New Orleans, La.**	**Shreveport, La.**	**Beloit, Wis.**

There are many others. Some large fleets. Ask for full information

WEATHERPROOF BODY CORPORATION

Makers of Bus, Commercial and Passenger Car Bodies, Truck Cabs, Ford Tops

CORUNNA, MICHIGAN, U. S. A.

Fender Standardization

Lowers Bus Upkeep

3M Standardized Fenders on motor buses mean a material saving in service expense. For their *strength* resists damage, their *quality* simplifies repairs, and their standardization saves time in replacement.

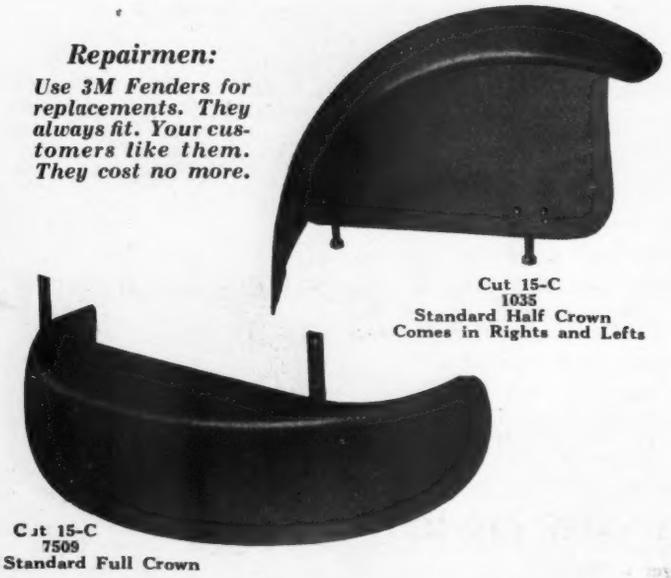
Because 3M Fenders are manufactured on a production basis, we can offer you these worth-while economies at prices no higher than those you are now paying for fenders.

The handsome appearance of 3M Fenders is another fact that will interest motor bus manufacturers and operators—*and with their good looks goes quality to keep them good-looking.*

Send us detailed specifications, so we can estimate on your fender needs.

Motors Metal Mfg. Co.
Detroit **Michigan**

Repairmen:
Use 3M Fenders for replacements. They always fit. Your customers like them. They cost no more.



Cut 15-C
1035
Standard Half Crown
Comes in Rights and Lefts

Cut 15-C
7509
Standard Full Crown

Lavine
STEERING GEARS

For Use on:
Passenger Cars
Motor Trucks
Motor Buses
Tractors

The Gear That Absorbs the Road Shocks

The Steering Gear of—

1. Proven design
2. Positive and easy adjustment
3. Pressure lubrication
4. Proper thread area
5. Evenly distributed bearing surfaces

Same gear can be used for both right and left-hand drives.

In use 12 years. Improved processes of manufacture make it a better product every year.

Lavine Gear Co.
Milwaukee, Wis.

Transport Offers Sound Sales Building Opportunity

The adaptability of Transport Models to all kinds of service plus performance records that have established nation-wide recognition of Transport quality prepares you to make the most of the urgent demand for increased transportation facilities manifested in all lines of industry.

In Transport you sell a truck that appeals to any business man's sense of service and economy. That's why Transport's "Two a Week Club" is growing so rapidly.

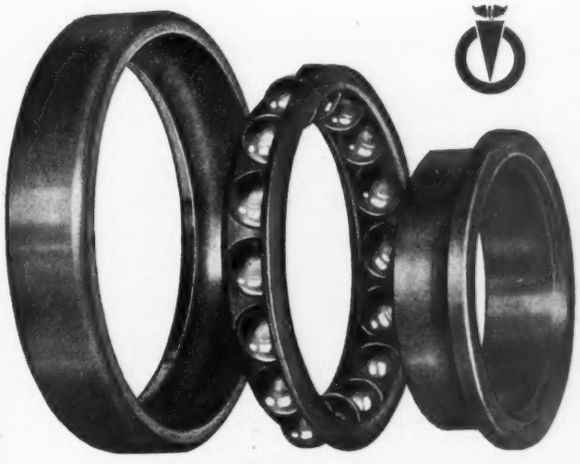
Ask for Further Information About This Big Net Profit Opportunity

TRANSPORT TRUCK COMPANY **Mt. Pleasant, Michigan**

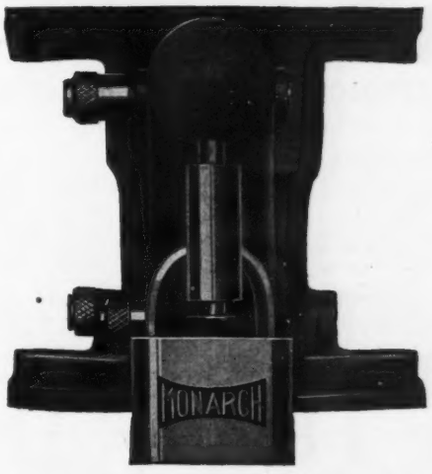
Angular Contact Radial Bearings
Angular Contact Thrust Bearings
Thrust Ball Bearings
"Star" Ball Retainers

THE BEARINGS COMPANY OF AMERICA
Lancaster, Penna.

WESTERN SALES OFFICE
1012 Ford Bldg., Detroit, Mich.



THE MODEL G



THE PIONEER Gas Velocity Governor

175,000 in Use All Over the World

MONARCH GOVERNOR CO.
DETROIT, MICH.

A Signal to You!

The appearance of this Symbol in a manufacturer's advertisement is a signal to you that the manufacturer has placed complete buying information about his product in the current issue of the CHILTON AUTOMOBILE DIRECTORY for your reference.

Watch for the Signal. Turn direct to the standard reference book of the trade and avoid lengthy correspondence.

Chilton Automobile Directory

(*Published Quarterly*)

Chestnut and 56th Streets **Philadelphia, Pa.**

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Heywood-Wakefield
REG. U.S. PAT. OFF

CROSS SEATS PAY!

Passengers Like to Face Forward

1 More aisle room through offset backs.

2 Pressed steel mechanism—light and strong.

3 Roomy, deep cushions with spring edge.

Write for illustrations and prices of seats in rattan, genuine or imitation leather.

Rattan car seat webbing, canvas lined or unlined and furnished in widths of from 12 to 48 inches.

HEYWOOD-WAKEFIELD COMPANY
Factory: Wakefield, Mass.

Sales Offices:

Heywood-Wakefield Co. 516 West 34th St. New York
Heywood-Wakefield Co. 1415 Michigan Ave. Chicago, Ill.
Railway and Power Eng. Corp. Toronto and Montreal
E. F. Boyle Monadnock Bldg. San Francisco, Cal.
F. N. Grigg 630 Louisiana Ave. Washington, D. C.
G. F. Cotter Supply Co. Houston, Texas

Rely on York Sheet Metal Parts

In closing the sale of your truck, the Sheet Metal Parts play a surprisingly large part—when they are York-made.

Not only are York Sheet Metal Parts rugged in construction and reasonably priced—they are uncommonly handsome in appearance. And that certainly helps make truck sales.

Do you need Fenders, Tanks, Hoods, Radiator Shields, Tool Boxes or Special Stampings? Ask us to quote you—this doesn't obligate you in the least.

York Corrugating Co.
York, Pa.

For Heavy Duty

4 Strong Parts, made to last, do all the work

Sell Rees Jacks for heavy duty truck service.

No job is too hard for their simple, powerful construction. Easily handled and operated—always dependable.

No. 25-A

Write us for information, prices, and terms. You can make money selling Rees Jacks with their *double worm gear drive construction. The most powerful lift yet devised.*

Manufactured Exclusively by

REES MFG. COMPANY
7505 Thomas Boulevard
Pittsburgh, Pa.

REES

A *Selling* Demonstration of the

ARCHER STEEL DUMP BODY AND HAND HOIST

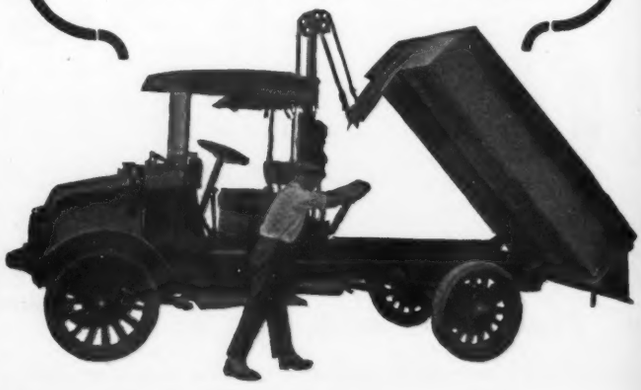
Show your customer how, with this easy-to-operate outfit, one man readily dumps the entire load. *Such a demonstration will sell the buyer,* because he will see with his own eyes the Archer's superior time and labor-saving features.

For road builders, coal concerns, grain merchants—for every business that needs efficient dumping equipment.

Write for special dealer proposition.

Our Standard Dump Outfits Fit All Makes of Trucks From 1 Ton to 5 Ton Capacity

ARCHER IRON WORKS
2450 West 34th Place, Chicago



AN OVERSIZED SLICE OUT OF HIS OPERATING DOLLAR

Your truck owner's "operating dollar" may be spent too largely on certain running-costs, as gasoline, oil or tires.

Or, the operating dollar may go too much for ***maintenance***—as for parts, or labor on repairs. You can fix the limit for these items per-mile-of-haulage, by measuring the mileage with a

Veeder
HUB ODOMETER

—finding cost-per-mile for ***each item*** of running expense, and maintenance.

With these separate cost-records you can mark the ***minimum*** for each item, enforce it in practice, and proportion your operating dollar with economy.

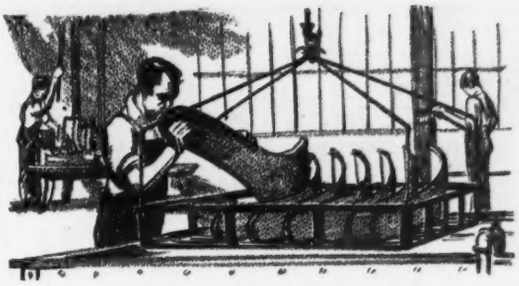
REGULAR MODEL $20.00
FORD TRUCK MODEL $15.00

Informative circular on request

The Veeder Mfg. Co.
10 Sargeant Street Hartford, Conn.

Sales and Service Stations in

Atlanta, Ga.
Baltimore, Md.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Denver, Colo.
Detroit, Mich.
Indianapolis, Ind.
Kansas City, Mo.
Los Angeles, Cal.
Montreal, Quebec
New Orleans, La.
New York, N. Y.
Philadelphia, Pa.
Pittsburgh, Pa.
Rochester, N. Y.
St. Louis, Mo.
St. Paul, Minn.
San Francisco, Cal.
Syracuse, N. Y.
Tacoma, Wash.
Toronto, Ont.
Washington, D. C.
—and other cities



How much work will a pound of cleaning material do?

10 lbs. of Oakite material cleans 480 auto fenders and other large sheet steel parts in one of the best known auto factories.

The job calls for the removal of oil and grease before japanning. It must be done right, to pass inspection and avoid rejects. A 10 minute immersion of these pieces in a thousand gallon tank does the work so well that not a single piece has been turned down on account of poor cleaning since they started using Oakite.

Oakite materials cost them slightly less than 1 cent for every 3 parts ***perfectly*** cleaned. That's economy!

Your own cleaning work may be quite different. It probably is. But you are doubtless just as interested as this plant was to get the most work you can out of each pound of cleaner you use. It is likely that with all our experience, we could offer you some valuable suggestions about cleaning methods, equipment or materials, that would materially reduce your cleaning costs.

Will you permit us to work with you to accomplish this? One of our cleaning specialists will be glad to co-operate with you. Write us when you would like to have him call.

There are 70 Oakite Service Men, Cleaning Specialists, located at:

Allentown, Pa.; Baltimore, Boston, Bridgeport, *Brooklyn, Camden, Cedar Rapids, *Chicago, *Cincinnati, *Cleveland, *Dallas, Dayton, *Denver, *Des Moines, *Detroit, Erie, Evansville, Ind.; Grand Rapids, Greenville, S. C.; Harrisburg, *Hartford, *Indianapolis, Kansas City, Lansing, Mich.; *Los Angeles, Louisville, *Milwaukee, *Minneapolis, *Montreal, Newark, New Haven, *New York, *Oakland, Cal.; Philadelphia, Pittsburgh, Portland, Me.; Poughkeepsie, *Providence, Reading, *Rochester, Rockford, *Rock Island, *St. Louis, *San Francisco, Schenectady, *Seattle, Toledo, *Toronto, Utica, Waterloo, Williamsport, Pa.; Worcester.

*Stocks of Oakite materials are carried in these cities

Oakley Chemical Co. *General Offices:* 38 Thames St. New York, N.Y.

OAKITE
Industrial Cleaning Materials

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The

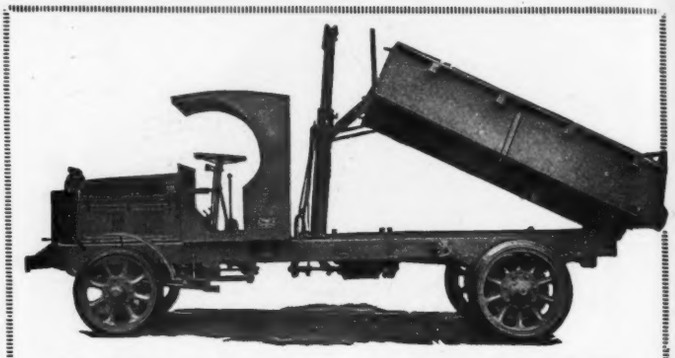
RED EYE *Does It!*

Red Eye Spring construction makes springs strong at what is ordinarily the weakest point—the union of the eye and top leaf.

The eye is forged at the same time the top leaf is heated and rolled, thereby eliminating numerous consequent heatings which often change and impair the micro structure of the steel.

You may be ***paying*** for quality springs—be sure you ***get*** all the ***strength*** you pay for by specifying Red Eye Saving Springs—the spring with the visible selling asset.

The Saving Spring Co.
Ashland, Mass.



STEWART'S STEEL DUMP BODIES

Built to withstand hard usage. Bodies made to give your truck additional service.

Standard and Special Steel Bodies. Let us quote on your requirements.

THE STEWART IRON WORKS CO.
COVINGTON, KENTUCKY
Manufacturers of

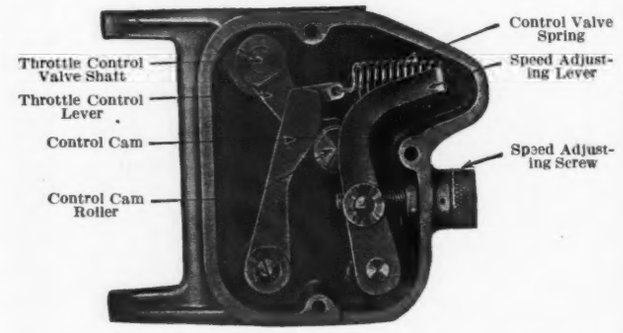
STEEL BODIES CABS BUMPERS DASHES RADIATOR GUARDS

COUNTERBALANCED
PARK
CRANKSHAFTS

Patented July 10, 1917

We have shipped 144,462 Counterbalanced Crankshafts up to August 20, 1923.

THE PARK DROP FORGE COMPANY
Cleveland, Ohio



More Sold Than All Other Makes Combined

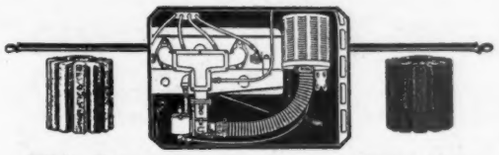
Here are a few reasons why more Handy Governors have been sold this year than all other makes combined: Simple construction—only two moving parts. Durable—will outwear any engine. Practical—does not restrict the power output.

Supplied for all models of Continental, Wisconsin and Buda engines. Also for Reo, Dodge, White, G. M. C. and Ford motors.

Write for liberal dealer and distributor discounts and catalog.

HANDY GOVERNOR CORPORATION
3021 Wabash Avenue Detroit, Mich.

HANDY GOVERNOR
The Only Governor that Requires No Attention



White Before Service — Dirty After Service

STAYNEW FILTER

ROAD DUST

The Greatest Enemy to Motors

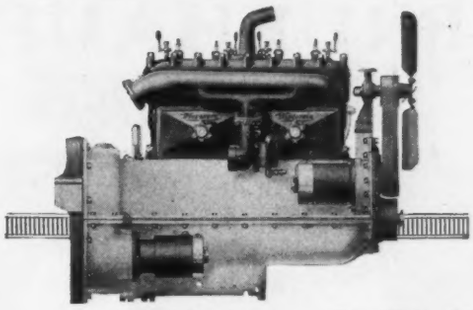
It is a well-known fact that road dust entering thru the carburetor air intake to the motor makes the oil gritty, thereby causing excessive wear on the pistons, piston rings, cylinder walls and bearings, making it noisy and inefficient, which results in direct loss of power, increased fuel consumption and, in most cases, reboring of cylinders and fitting of new pistons and piston rings is necessary.

Eliminate this trouble and expense by installing a Staynew Filter, which will save the cost of installation many times.

Complete sizes and fittings for all makes of cars and trucks; simple to install and requires no attention.

Exclusive territory to live dealers and distributors. Write for details.

STAYNEW FILTER CORP.
Rochester, N. Y.



Seven Cardinal Points of WISCONSIN Supremacy

1. *Performance*
2. *Economy*
3. *Light Weight*
4. *Service*
5. *Production*
6. *Complete Line*
7. *Standardized Construction*

WISCONSIN MOTOR MFG. CO.
MILWAUKEE WISCONSIN

Wisconsin CONSISTENT

COLUMBIAN

Partition Mounted
3 Point Supported

TRUCK TANKS

Exclusive and Extraordinary Features—Partition Mounted, Lowest Mounting, Less Deadweight. Three-Point Supported, No Twisting Strains, Less Upkeep Expense. Jointless Pipe Lines with Funnel Outlets. Welded-on Bucket Boxes. Removable and Adjustable Side Carrying Racks, Tank, Mounting, Pipe Lines and Bucket Box Welded into a Monometallic Unit. Correct Distribution of Load on Rear Axle. The Triumphant Climax to Truck Tank Construction.

COLUMBIAN
Monometallic
DUMP BEDS

Longitudinal sills formed from side and bottom members. All members electrically welded into monometallic unit. No rivets in entire assembly. Stronger, more rigid, longer service. Five models. Tail gate hinged top and bottom—double acting.

COLUMBIAN
Lightning Hoist

A simple device built upon sound engineering principles, giving power that enables a man to dump a five-ton load with ease and without power expense. Narrow and compact in construction. Mounts in 11 inch space.

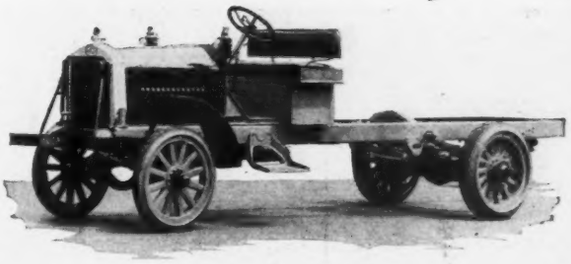
THE BIG 3
of the
Truck Equipment Field

A letter, a telegram or a ring on the telephone will bring full data and way down prices on any one or all three.

COLUMBIAN STEEL TANK CO.
Tanks for the World — **Established in 1894**
1405-1625 West 12th St. — **Kansas City, Mo.**

MASTER TRUCKS

Balanced Oversize



SPEED MASTER—¾-1¼ Ton

Highest Achievement for Fast Freight Transportation

HEAVY DUTY MODELS—1½-6 Ton

A Revelation to Motor Truck Buyers

Highest grade recognized standard units used throughout. Built by a responsible company of unquestioned financial stability.

Valuable Territory Open to Responsible Dealers

MASTER MOTORS CORPORATION
2381-2399 Archer Ave. — **CHICAGO, U. S. A.**

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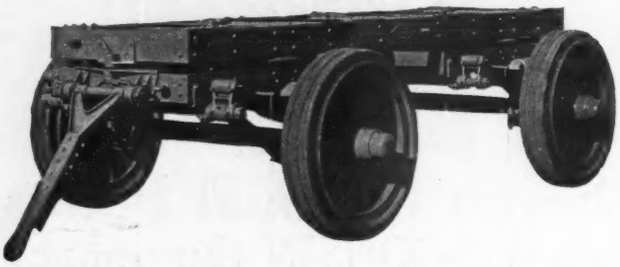
FRUEHAUF TRAILERS



Repeat Sales—for Big Profits

A sale of one Fruehauf Trailer is usually followed by a repeat order—which is often a fleet sale.

That of course is due to Fruehauf superior design, exclusive features of construction—and immediate sharp lowering of haulage costs.

Fruehauf Trailer Company is one of the largest and oldest trailer concerns in the United States. It has come thru the trying period of the last two years in a financially sound condition. It is growing steadily—and Fruehauf dealers are growing with it.

Write for the Fruehauf list of "Saving-hauling-costs Fleets," the road-sign to opportunity for the dealer with vision and aggressive sales punch.

FRUEHAUF TRAILER COMPANY
10921 Harper Ave. Detroit, Mich.

Are You Open to Conviction?

We ask of you nothing more than an open mind and a willingness to look into any reasonable proposition that may bring you bigger success. If you have these two qualifications, we are ready to show you facts that will convince you that you can build up the same kind of a substantial, steadily-growing motor truck business as scores of Day-Elder dealers have built up. All you need do is send us a letter signifying that you will listen. We'll do the rest.

Incidentally, if you are open to conviction, you'll never find a better time to write that letter than right now while you are thinking about it.

DAY-ELDER MOTORS CORPORATION
NEWARK NEW JERSEY

DAY-ELDER

WORM-DRIVE MOTOR TRUCKS

LEECE-NEVILLE

12 Volt Lighting Systems *for* Motor Busses

Where Light Means Business

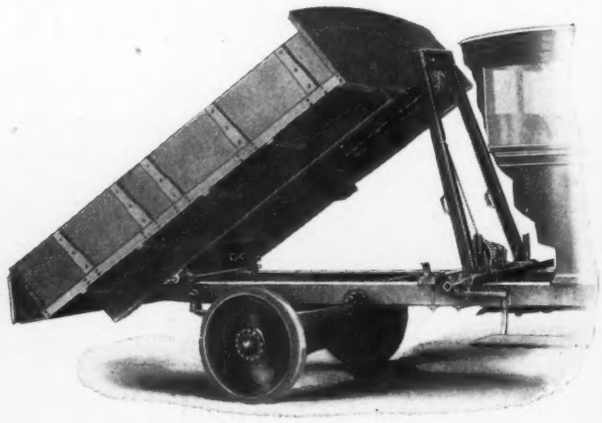
The bright, reliable light, that Leece-Neville systems insure, attracts night business. People are attracted to the brightly lit motor bus every time in preference to the dingy, dangerous bus that lumbers along blindly thru the dark.

Leece-Neville equipment is especially designed to give adequate light to motor busses. Our generators and compensators automatically care for the increased current requirements of night service.

As an evidence of its efficiency Leece-Neville Electric Equipment is now adopted as standard on vehicles made by the Autocar Company, Brockway Motor Truck Co., Haynes Automobile Co., Mack International Motor Truck Co., The G. A. Schacht Motor Truck Co., White Motor Truck Co., and a number of other representative firms.

Send for Full Details of This Wonderful System

THE LEECE-NEVILLE CO.
Cleveland, Ohio



ROCK TYPE H HOIST

A highly efficient, well designed and carefully built hand hoist for dump bodies up to 3½ ton capacity.

Cut gears are used on the winch.

Can be mounted on any width of chassis without change.

Occupies but 9″ of space.

No holes required in frame for mounting hoist.

Dumping angle from 35° to 45°.

Price, With Body Hinge, $85.00

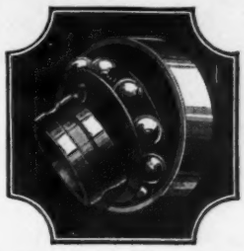
ROCK MANUFACTURING CO., Waterloo, N. Y.

THE *differential* is so important a factor in the performance of every truck that if it fails to do its work, the entire truck is disabled—so is the truck builder's reputation. That's why far-sighted manufacturers specify Brown-Lipe-Chapin.

MANUFACTURED AT
SYRACUSE, N. Y.

BROWN-LIPE-CHAPIN
DIFFERENTIALS—BEVEL DRIVE GEARS

"NORMA"
PRECISION
BALL BEARINGS



Internationally recognized as the standard bearings for ignition apparatus and lighting generators

THE NORMA COMPANY OF AMERICA
Anable Avenue
Long Island City New York
BALL, ROLLER AND THRUST BEARINGS

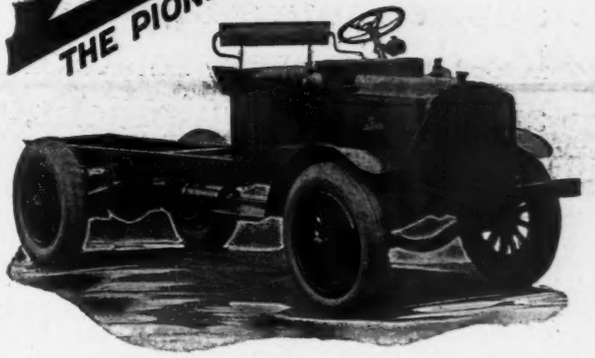
Butler
TRUCK SPRINGS
and
Butler
CHROME NICKEL
TRUCK AXLES

If your jobber does not handle Butler lines, write us and some other jobber will give you service.

Also nuts, keys and key stock, and
GILLIAM BEARINGS

BUTLER AUTOMOTIVE STEEL CO.
101 M Street, Easton, Pa.

Rowe TRUCKS
THE PIONEER



Complete Line Worm-Driven Trucks
¾ to 6 Ton Capacity

ROWE COMMERCIAL BODIES
BODIES OF UNUSUAL CONSTRUCTION

Valuable Territory Open to Dealers
Write for Catalogue

ROWE MOTOR MANUFACTURING CO.
LANCASTER, PA.

Bowen-Empress
HIGH PRESSURE LUBRICATING SYSTEM

For All Motor Cars and Trucks

A practical and effective system of lubrication for the chassis which satisfactorily meets all requirements and at the same time eliminates all of the objectionable features of the systems now in use.

One hand operates it.

Effectively handles all grades of grease or oil.

Pressure or gravity system.

Convenient to handle, simple to operate.

Cleans and lubricates.

Quick. The entire chassis can be lubricated in less than half the time required with any other similar system.

Easily installed. A wrench is the only tool needed.

One Hand Operates It

Write for Descriptive Booklet No. F-302

Bowen Products Corporation

Auburn New York

THE REASONS WHY
YOU Can Make Money With DENBY

Complete Line
Fair Prices
Substantial Discounts
Reasonable Requirements

EXPORT DEPARTMENT: 47 West 63rd St., New York

DENBY MOTOR TRUCK CORPORATION
DETROIT, MICHIGAN

There's a GILLIAM Bearing for practically every application and every location in every make of automotive equipment.

GILLIAM TAPERED ROLLER BEARINGS are interchangeable with other makes of tapered roller bearings.

Ask our nearest distributor or write us direct for our latest Price List and Replacement Size Data.

Cups Cones Rollers
Alloy Steel Throughout

GILLIAM TAPERED ROLLER Bearings

Axle manufacturers equipping with Gilliam Tapered Roller Bearings include:

Adams	Clark	Standard
Salisbury	Flint	Equipment
Columbia	U. S.	Wisconsin
Torbensen	Sheldon	Vulcan

THE GILLIAM MFG. CO. - Canton, Ohio

Universal Joints That Give Real Service

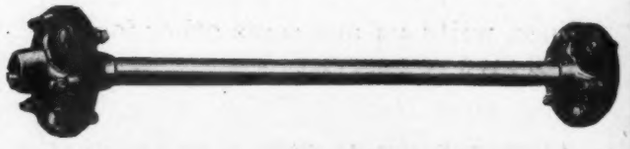
Electrically Heat Treated Nickel Steel Tube Makes

A lighter weight shaft
A greater strength shaft
A non-whipping shaft

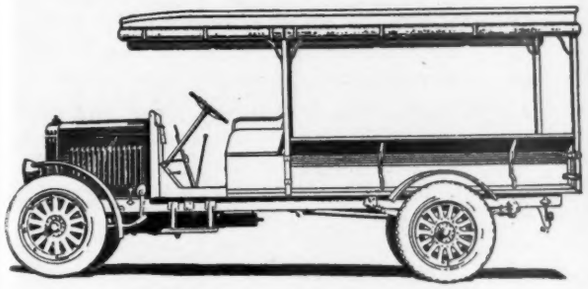
Flexible Fabric Disc Joint Means

Cushioned power impulses
Longer life to gears and bearings
Minimum replacement costs
No need of service attention

SNEAD & CO. Jersey City, N. J.



SNEAD CUSHION DRIVE



KISSEL'S TON EXPRESS

THE Ton Express—built for the retailer, merchant, wholesaler, farmer—is a regular One-Ton Kissel Truck in which strength and durability are combined to make it the best value on the market, irrespective of price.

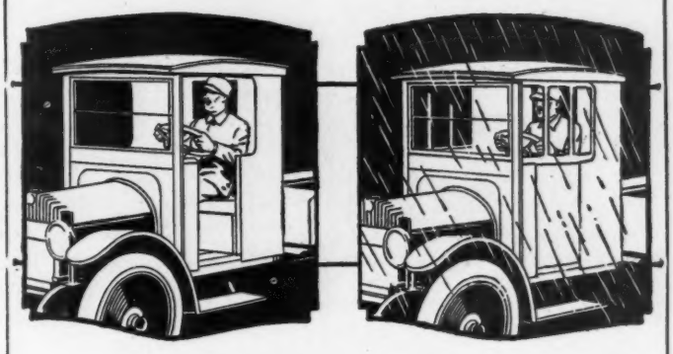
$1585
Chassis—Standard Equipped

$1985
For chassis and body completely equipped with worm-drive rear axle, electric lighting and starter, cord tires, express body and top—completely painted. Prices F.O.B. Hartford, Wisconsin.

KISSEL *Motor Trucks* 5 Sizes

The complete line of Kissel Trucks creates a sales opportunity that makes the Kissel Franchise in your territory doubly valuable. Also Special Road Builders' Truck, Hoppers, Measuring Boxes, Turntable, etc. Send for franchise details.

The Kissel Motor Car Co.
Hartford Wisconsin
Originators of the ALL-YEAR Cab for Trucks



use HIGHLAND cabs
MODEL D

The Windows

THEY ARE INDEPENDENT OF THE DOORS
THEY SLIDE, THEY FOLD AS THEY OPEN

The doors are arm high and roll into pockets beside the driver's seat, where they automatically lock.

THE HIGHLAND BODY MFG. CO.
403 Township Avenue Cincinnati, Ohio

ADAPTABILITY

The Highest Standards of bearing manufacture are rigidly maintained. This, coupled with the exclusive feature of three area contact, giving unusual thrust load capacity with a minimum of wear, makes the

Schatz
"UNIVERSAL"
Registered *Annular* U.S. Pat. Off.
BALL BEARING

of unusual adaptability in conforming to all bearing requirements.

The Federal Bearings Co.
Incorporated
POUGHKEEPSIE, N. Y.

FIRST-QUALITY materials and workmanship are built into our sturdy, distinctive Bus Bodies. Quantity production of standardized units enables us to offer them at extremely moderate prices. You dealers will find these high-class, low-priced bodies powerful aids in closing bus sales.

Complete Catalog and Prices Gladly Sent on Request

BUS BODY CORPORATION
Exclusive Bus Body Builders
Evansville Indiana, U. S. A.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

TOPPINS TRUCK WITH FORDSON POWER PLANT

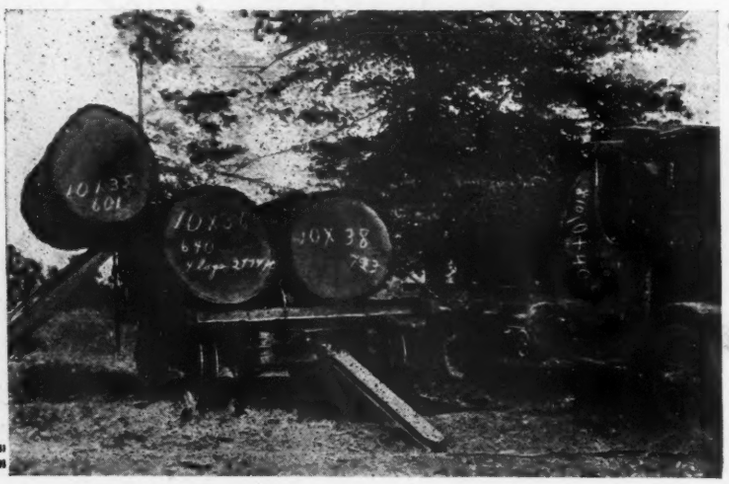
ECONOMY of first cost and operation have proven the value of the Toppins Truck.

Utilizing the Fordson Power Plant and operating on kerosene reduces expenses and insures owner universal service.

Affords use of Fordson when needed—or of 2½ ton truck—and a power plant at all times.

Write for Further Particulars

Toppins Tractor Truck Co.
Milwaukee Wisconsin



Loads 1500 ft. of Logs in 20 Minutes

Operated by one man, an AMOS LOG LOADER will load 1500 feet of logs on the chassis you sell.

Under favorable conditions, the Loader will load and securely bind the logs within 20 minutes.

DEALERS:
For Literature and Prices, Write

Amos Loader Company
Edinburg Indiana

WYMAN-GORDON

The Crankshaft Makers

Worcester Division
WORCESTER, MASS.

Ingalls-Shepard Division
HARVEY, ILL.

Peerless Hoist, Showing Body Hitch Worm and Gear, Machine Cut

The Only Logical Choice for Dealers

There is every reason why the Peerless is the logical hoist for you to sell. The discount is so liberal that your time is well paid for and a handsome profit is earned on every sale. The price appeals to your customers, as it is from one-third to one-half lower than the cost of other hoists.

But profit and price would make little appeal if you did not conscientiously believe that the

Peerless Hand Hoist

was superior in mechanical perfection and operation to any other lifting apparatus made. Rest content! It is *the only* efficient hoist that can be attached to either steel or wood bodies. It is *the only* efficient hand hoist that sells at a moderate price. These are pretty strong reasons why you should consider its sales possibilities. An operator can hoist from one to four tons in from one to four minutes. What more could be required on speed?

You are getting calls for hoists and are often undecided as to *which* hoist to recommend. We'll tell you *why* the Peerless fills the bill every time. Will you let us?

Alsteel Bodies Guaranteed to Take Care of 100% Overload Under Rough Usage

The Auglaize Hoist and Body Company
New Bremen, Ohio

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

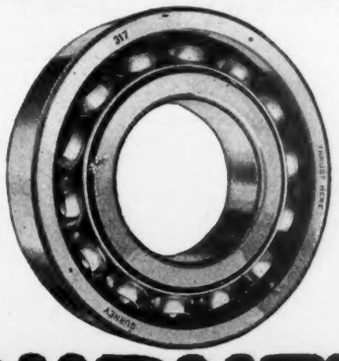
Gurney Ball Bearings Are Better

Their Greater Load Capacity (for their size) than other bearings makes Gurneys best for replacement work.

The new pressed steel separator, recently adopted after years of trial, adds the final touch that places Gurney Bearings in the foremost position.

Let our Engineers assist you

GURNEY BALL BEARING CO.
402 Chandler St. Jamestown, N. Y.

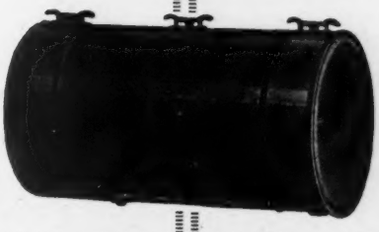


GURNEY
BALL BEARINGS

(18211)

We Can Save You Money on Sheet Metal Work

Truck manufacturers will find that our quotations for sheet metal specification service will lower their costs by a significant figure. Our thoroughly modern plant and big volume of business enable us to turn out your work very economically and with the closest adherence to specifications.



It will cost you nothing to investigate our prices for *cowls, fenders, hoods, splash pans, running-boards,* and all sheet metal parts.

WRITE US

A. B. & B. SHEET METAL WORKS

B&B **Specification Service**

FOND DU LAC AVENUE AT 33RD ST.
MILWAUKEE

BUSH RADIATORS

BUILT TO ENDURE FOR TRUCKS - BUSES

BUSH MANUFACTURING CO.
HARTFORD, CONN.

Adds Years to the Life of

Your Light Delivery Truck Assembly

Only in the Columbia Single Reduction Bevel Gear Axle will you find those features of construction that will add years to the life of your light delivery, high-speed truck assembly.

The famous Columbia one-piece housing—pressed from a single piece of steel, and welded once—adds 50% greater torsional strength, ***alone.***

Let us tell you the Columbia story in full. It will pay interested truck manufacturers to write for it to

The Columbia Axle Co. Cleveland, Ohio

COLUMBIA SINGLE REDUCTION AXLES

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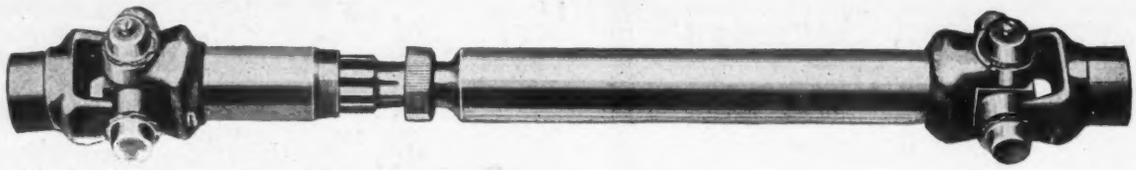

THE JOINTS ARE EASY TO GET AT—YOU CAN
READILY SEE IF THEY NEED ATTENTION

Blood-Brothers Machine Company
ALLEGAN MICHIGAN

PRESSED STEEL FRAMES
The largest and best equipped
frame plant in the world
A-O-SMITH CORPORATION
-MILWAUKEE-

White Trucks

Built to do the Most Work
For the Least Money

THE WHITE COMPANY, *Cleveland*

The HUCK Wide Track 25-35 Passenger Bus Axle

Symmetrical lines, large road and overhead clearance, complete driving mechanism removable as a unit, self-equalizing floating cam, 21 inch brakes, full-floating construction—these are the features that make the HUCK Model 85 an ideal motor bus axle. Made to harmonize with advance motor bus design.

Motor bus manufacturers should write for full details of this highly efficient, accessible and easy-to-service axle. It will prove a strong sales feature and render long and dependable service. Like every HUCK axle it delivers 96% power to the rear wheels. We invite your inquiry.

HUCK AXLE CORPORATION

4640 West Harrison St., Chicago, Illinois

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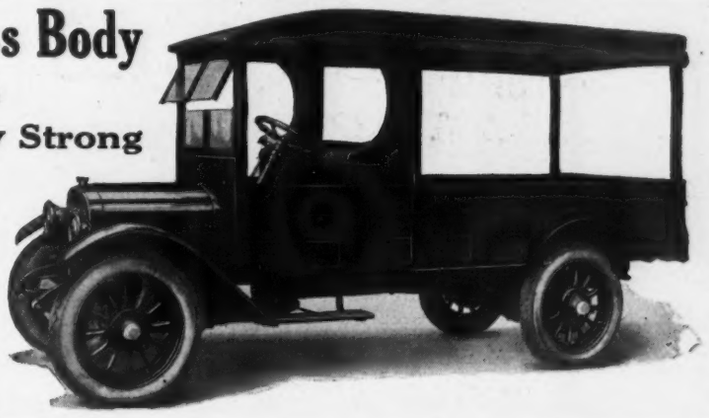
A New Ribbed Panel Express Body

Added to Babcock Line

Very Roomy and Exceptionally Strong



SPECIFICATIONS: Loading space, 96" x 56½" x 64" high. Width between Wheelhouses, 45"; Side Panels and Tail Gate, 19½" high, steel lined; Body heavily ironed; Metakloth Curtains side and rear, also back of Driver's Seat; Driver's Storm Curtains with Pyralin Lights; Fore Doors, Windshield, Rear Fenders and Splashers built in Body; Spring cushion Seat and full width Back; Roof, 12 oz. Oil Duck, leaded and painted.

H. H. BABCOCK COMPANY

Established 1845

WATERTOWN NEW YORK

THE BIGGEST RETURNS FOR YOUR EFFORTS

will be secured through a Commerce Dealership. It lets you concentrate on three big-selling models of specialized, standard-unit trucks. It gives you the support of a clean, sound, long-established organization. It protects you with a square-deal policy, and backs you with a sound merchandising service. Write about open territory.

Commerce Motor Truck Co.

7424 Mackie St., Detroit, Mich.

Export Department:

132 Nassau St., New York City

Cable: COMERSTRUX

Commerce TRUCKS

Cutting Costs

TO enable the truck owner to keep maintenance costs at a minimum, the Warner Odometer, Model 76, is indispensable. Records mileage for the season and trip. Makes it possible for the driver to determine the exact number of miles obtained from a set of tires, gallon of gas or quart of oil. He can then select the most economical brands of fuel and tires.

The Warner Odometer is sturdily built. Heavy steel case—3½ inches long by 1¾ inches wide—finished in black enamel. 100,000 mile season odometer; 100 mile trip register, that quickly resets to any mile or tenth of a mile. Specify make, model, tire size and rear axle ratio of truck, when ordering.

Warner Odometer, Model 76, Complete, $18.00

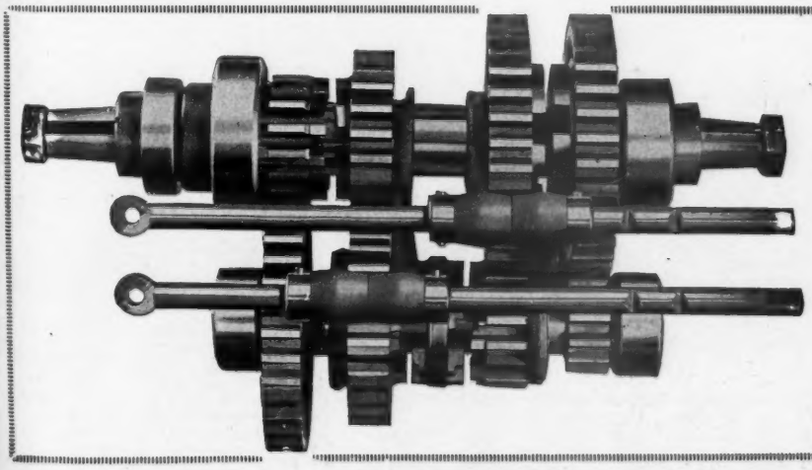
Stewart-Warner Speedometer Corporation

Chicago, Illinois, U. S. A.

Stewart

CUSTOMBILT ACCESSORIES

Used on 8 Million Cars



COTTA GEAR CO.

INDIVIDUAL CLUTCH TRANSMISSIONS

FOR

3½, 5 and 7 Ton Trucks

Notice the short, compact and husky construction.

Long bearings in the loose gears.

COTTA GEAR CO., Rockford, Ill.

BUYERS' INDEX

This is NOT an index of what manufacturers make, but merely an index of the CONTENTS of both the reading and advertising pages of THIS PARTICULAR ISSUE, and is placed here for the benefit and convenience of our readers

Acetylene Gas Tank (Lighting)
Prest-O-Lite Co., The, Inc.....124, 125

Air Filters (For Removing Dust From Carburetor, Etc.)
Staynew Filter Corporation.....177

Automotive Equipment
Johns-Manville, Inc., ...81, 82, 83, 84
Westinghouse Electric & Manufacturing Co. 100, 143

Axles
Atlas Axle Co..... 60
Butler Automotive Steel Co.....179
Clark Equipment Co.....Inside Front Cover
Columbia Axle Co.....183
Continental Axle Co..... 59
Eaton Axle & Spring Co.....158
Huck Axle Corporation.....184
Russel Motor Axle Co..... 75
Salisbury Axle Co.....147
Sheldon Axle & Spring Co.....147
Shuler Axle Co., Incorporated..... 94
Timken-Detroit Axle Co.....29, 118

Axle Spindles
Union Switch & Signal Co.....171

Ball Bearings
Bearings Co. of America.....173
Federal Bearings Co., Incorporated.....181
Gurney Ball Bearing Co.....183
Hess-Bright Manufacturing Co.....6, 29
Norma Co. of America.....169, 179
U. S. Ball Bearing Manufacturing Co....190

Ball Retainers
Bearings Co. of America.....173

Batteries
Prest-O-Lite Co., Inc..... 62

Bearings & Bushings
Bearings Co. of America.....173
Federal Bearings Co., Incorporated.....181
Gurney Ball Bearing Co. (Thrust).....183
Muzzy-Lyon Co. 63
U. S. Ball Bearing Manufacturing Co....190

Bodies
Archer Iron Works.....174
Auglaize Hoist & Body Co.....182
Babcock, H. H., Co. (Express).....185
Bishop & Co..... 67
Columbian Steel Tank Co.....177
Galion Allsteel Body Co.....166
Heil Co. 99
Hoover Body Co..... 28
Hydraulic Hoist Mfg. Co.....160
Metropolitan Body Co.....169
Providence Body Co..... 80
Rowe Motor Manufacturing Co.....179
Stewart Iron Works Co.....176
Van Dorn Iron Works Co.....110
Weatherproof Body Corporation.....171
Wood Hydraulic Hoist & Body Co.....128

Body Material
Pantasote Co. 113

Brake Lining
Johns-Manville, Inc. 81, 82, 83, 84
Thermoid Rubber Co.....119, 120, 157

Bumpers
Eaton Axle & Spring Co., Cox Bumper Division 135
Stewart Iron Works Co.....176

Buses
Brockway Motor Truck Co..... 63
Clydesdale Motor Truck Co..... 72
Fageol Motors Co..... 26
Federal Motor Truck Co..... 30
Garford Motor Truck Co..... 30
Graham Brothers 30, 159
International Motor Co..... 28
Ruggles Motor Truck Co..... 61
Selden Truck Corporation.....117
Service Motors, Incorporated..... 96
United Motors Products Co.....61, 149
Union Motor Truck Co.....62, 93
White Co. 27

Bus Bodies
Bus Body Corporation.....181
Weatherproof Body Corporation.....171

Bus Equipment
Atlas Axle Co..... 60
Buda Company 152
Clark Equipment Co.....Inside Front Cover
Continental Axle Co..... 59
Corbin Screw Corp..... 59
Eaton Axle & Spring Co.....158
Eaton Axle & Spring Co., Cox Bumper Division 135
Eaton Axle & Spring Co., Perfection Spring Division 97
Fuller & Sons Mfg. Co.....61
General Tire & Rubber Co.....116
Kellogg Mfg. Co..... 62
Manley Mfg. Co..... 60
Motors Metal Mfg. Co.....172
Prest-O-Lite Co., Inc..... 62
Ross Gear & Tool Co..... 73
Shuler Axle Co..... 94
Siebel Air Spring Co..... 60
Superior Lamp Co..... 63
Teagle Co. 95
Waukesha Motor Co.....29, 134
Zenith-Detroit Corporation 148

Bus Heating Systems
Petry N. A. Co., Inc.....26, 168

Bus Seats
Hale-Kilburn Co. 122, 123
Heywood-Wakefield Co. 25, 174

Cable (Ignition, Lighting & Starting)
Packard Electric Co..... 2

Cabs
General Woodwork Corporation.....163
Highland Body Manufacturing Co.....181
Lansing Commercial Body Co..... 76
Metropolitan Body Co.....169
Sheet Steel Products Co.....193
Weatherproof Body Corporation.....171

Cab & Dash Needs (Steel)
Stewart Iron Works, Inc.....176

Carburetors & Outfits
Stromberg Motor Devices Co.....131
Zenith-Detroit Corporation 148

Car Window Equipment
National Lock Washer Co..... 27

Castings
(See Aluminum, Bronze & Brass, Iron Castings, Die Castings, Malleable & Steel Castings.)

Cement
Johns-Manville, Inc. 81, 82, 83, 84

Cleaning Compounds
Oakley Chemical Co.....175

Clutches
Borg & Beck Co..... 4
Brown-Lipe Gear Co.....139
Fuller & Sons Mfg. Co.....164

Commercial Cars (Electric)
Walker Vehicle Co.....142
Ward Motor Vehicle Co.....194

Commercial Cars (Gasoline)
Acme Motor Truck Co..... 77
American-LaFrance Fire Engine Co. Inc. 145
Atterbury Motor Car Co.....170
Autocar Co. 8
Bessemer Motor Truck Co.....162
Commerce Motor Truck Co.....185
Day-Elder Motors Corporation.....178
Denby Motor Truck Corporation.....180
Duplex Truck Co.....165
Federal Motor Truck Co..... 54
Garford Motor Truck Co.....151
General Motors Truck Co.....80, 155
Graham Brothers 159
Gramm-Bernstein Motor Truck Co.....189
International Harvester Co. of America, Incorporated 5
Kissel Motor Car Co.....181
Master Motors Corporation.....177
Pierce-Arrow Motor Car Co.....193
Republic Motor Truck Co., Inc.....108, 109
Reo Motor Car Co..... 76
Rowe Motor Manufacturing Co.....179
Schacht, G. A. Motor Truck Co.....115
Selden Truck Corporation.....117
Service Motors, Inc..... 96
Signal Truck Corporation..... 79
Standard Motor Truck Co.....101, 102
Stewart Motor Corporation.....Front Cover
Super-Traction Co. 166
Triangle Motor Truck Co.....167
Transport Truck Co.....173
Union Motor Truck Co..... 93
White Co., The.....184
Wisconsin Truck Co., Inc..... 74

Controls
Brown-Lipe Gear Co.....139

Controllers
Westinghouse Electric & Manufacturing Co. 143

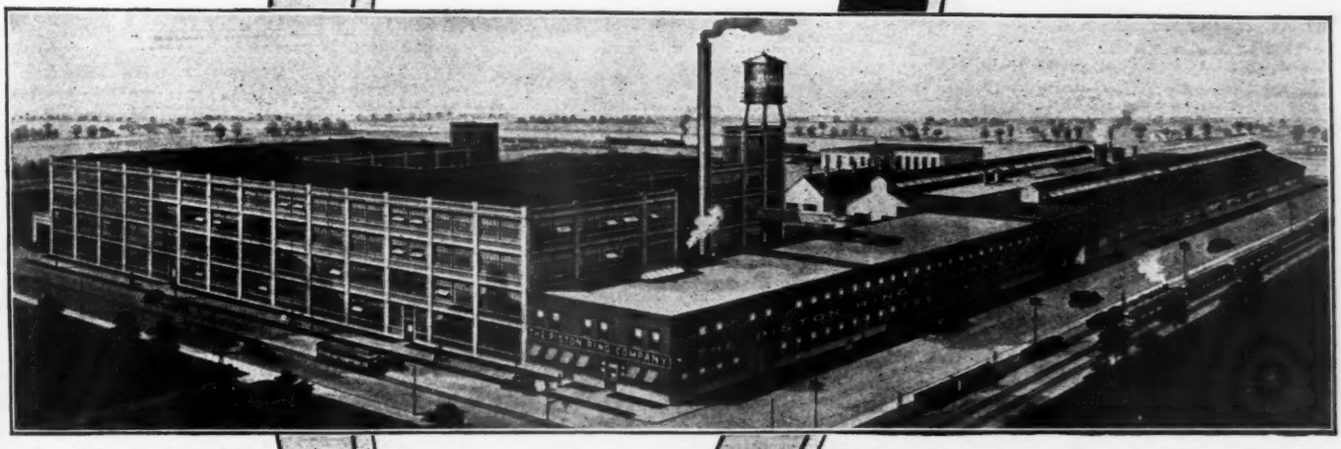
Crankshafts
Park Drop Forge Co.....176
Union Swith & Signal Co.....171
Wyman-Gordon Co. 182

Differentials
Brown-Lipe-Chapin Co. 179

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

3,000,264 rings in one month

QUALITY Piston Rings are stocked in 4,557 standard sizes and oversizes and list as low as 25c.



The Piston Ring Company
Muskegon, Michigan

QUALITY Piston Rings

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

BUYERS' INDEX—Continued

Dumping Units
Columbian Steel Tank Co.....177
Galion Allsteel Body Co.....166
Metropolitan Body Co.....169
Wood Hydraulic Hoist & Body Co.....128

Dust Caps
Schrader's, A. Son. Inc.....112

Electric Lighting Systems
(See Starting & Lighting Outfits.)

Engines
Buda Co. 152
Climax Engineering Co.....103
Continental Motors Corporation. Back Cover
Waukesha Motor Co.....29, 134
Wisconsin Motor Mfg Co.....177

Equipment & Parts for Ford Cars
Handy Governor Corporation.....176
Johns-Manville, Inc. 81, 82, 83, 84
National Hoist & Body Co..... 80
Veeder Mfg. Co.....175
Warford Corporation 144

Felts
Western Felt Works..... 61

Fenders
A. B. & B. Sheet Metal Works.....183
Motors Metal Manufacturing Co.....172
York Corrugating Co.....174

Fordson Truck Units
Toppins Tractor Truck Co.....182

Forgings
Park Drop Forge Co.....176
Union Switch & Signal Co.....171
Wyman-Gordon Co. 132

Frames
Parish Mfg. Corp.....147
Smith, A. O. Corporation.....184
Van Dorn Iron Works Co.....110

Gauges
Schrader's, A. Son, Inc.....29, 112

Gears & Gear Cutting
Brown-Lipe-Chapin Co. 179
Fuller & Sons Mfg. Co.....164

Generators (Lighting & Starting)
Leece-Neville Co. 178
North East Electric Co.....129

Glass Lined Tanks
Pfaudler, The, Co.....105

Governors (Engine)
Handy Governor Corporation.....176
Monarch Governor Co.....173

Grease, Oil Cups & Guns
Bowen Products Corporation.....180

Hoists & Cranes
Archer Iron Works.....174
Auglaize Hoist & Body Co.....182
Borg & Beck Co..... 4
Columbia Steel Tank Co.....177
Galion Allsteel Body Co.....166
Heil Co. 99
Hydraulic Hoist & Mfg. Co.....160
National Hoist & Body Co..... 80
Rock Manufacturing Co.....178
Van Dorn Iron Works Co.....110
Wood Hydraulic Hoist & Body Co.....128

Hoods
A. B. & B. Sheet Metal Works.....183
York Corrugating Co.....174

Horns
Buell Manufacturing Co.....190
North East Electric Co.....129

Hub Odometers
Johns-Manville, Inc. 81, 82, 83, 84
Veeder Mfg. Co., Inc.....175

Ignition Specialties
Eisemann Magneto Corporation.....170
North East Electric Co.....129
Splitdorf Electrical Co.....121
Teagle, The, Co..... 95
Westinghouse Electric & Manufacturing Co. 100

Industrial Trucks
Elwell-Parker Electric Co..... 74

Jacks
Buckeye Jack Mfg. Co.....150
Manley Mfg. Co..... 60
Rees Manufacturing Co.....174

Lamps (Acetylene)
Dietz, R. E. Co.....165

Lamps (Electric)
Dietz, R. E. Co.....165
Superior Lamp Co..... 63

Lathes (Valve)
Albertson & Co.....127

Leather (Artificial)
Keratol Co. 153

Lighting Outfits
Prest-O-Lite Co., The, Inc.....124, 125

Loaders (Truck)
Amos Loader Co.....182

Lubricants
Dixon, Joseph, Crucible Co.....146

Lubricating Systems
Bowen Products Corporation.....180

Lubricators
Bowen Products Corporation.....180

Machines
(See Tools, Machines, etc.)

Magnetos
Eisemann Magneto Corporation.....170
Splitdorf Electrical Co.....121
Teagle, The, Co..... 95

Malleable Castings
American Malleable Castings Assn.....111

Milk Tanks
Pfaudler, The, Co.....105

Motors (Electric)
Westinghouse Electric & Manufacturing Co. 143

Motors (Gasoline)
(See Engines, Gasoline)

Oils
(See Lubricants)

Packings
Johns-Manville, Inc. 81, 82 83, 84

Pedals
Petry, N. A., Co., Inc.....168

Pistons, Rings & Pins
Gill Manufacturing Co.....126
Piston Ring Co.....187
Splitdorf Electrical Co.....121

Pressed Steel Frames
Smith, A. C., Corporation.....184

Pressed Steel Parts
Motor Wheel Corporation. Inside Back Cover
Van Dorn Iron Works Co.....110

Pressed Steel Tanks
Heil Co. 99

Propeller Shafts
Blood-Brothers Machine Co.....184
Spicer Mfg. Corporation.....147

Pumps (Engine Driven)
Continental Pneumatic Equipment Co....164
Petry, N. A., Co., Inc.....62, 168

Radiators
Bush Manufacturing Co.....183

Radiator Guards
Stewart Iron Works Co.....176

Radiator Shields
York Corrugating Co.....174

Rattan Car Seat Webbing
Heywood-Wakefield Co. 174

Rim Nut Bushings
Schrader's, A. Son, Inc.....29, 112

Roller Bearings
Bower Roller Bearing Co.....141
Gilliam Mfg. Co.....180
Hyatt Roller Bearing Co.....30, 107
Norma Co. of America.....169, 179

Roofings (Asbestos)
Johns-Manville, Inc. 81, 82, 83, 84

Seats
Hale-Kilburn Co. 122, 123
Heywood-Wakefield Co. 25, 174

Sheet Metal Parts
A. B. & B. Sheet Metal Works.....183

Spark Plugs
Splitdorf Electrical Co.....121

Speedometers
Corbin Screw Corp..... 59
North East Electric Co.....129
Stewart-Warner Speedometer Corp.....185

Springs (Auto)
American Autoparts Co. 130
Butler Automotive Steel Co.....179
Cleveland Pneumatic Tool Co..... 29
Detroit Steel Products Co.....137, 138
Eaton Axle & Spring Co., Perfection Spring Division 97
Mather Spring Co.....156
Saving Spring Co.....176
Seibel Air Spring Co., Inc.....
Sheldon Axle & Spring Co.....147
Spring Perch Co..... 7

Springs (Replacement)
Detroit Steel Products Co.....137, 138

Spring Lubricators
Springlife Co. 29

Spring Shackles
Union Switch & Signal Co.....149

Stampings
Motor Wheel Corporation. Inside Back Cover
York Corrugating Co.....174

"Gramm" says:

What we need today is a "Society for the Prevention of Cruelty to Motor Trucks"

Our Trucks have always been so constructed as to hold their own under adverse conditions

A wise dealer knows that

Decreased Troubles Mean Increased Prosperity

The Gramm-Bernstein Motor Truck Co.

Lima, Ohio, U. S. A. **P. O. 599**

We Furnish Service Parts on "Gramm Trucks"
Back to the Original, 22 Years Ago

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

BUYERS' INDEX—Continued

Starting & Lighting Outfits
Eclipse Machine Co. (Bendix Drive)....168
Leece-Neville Co. 178
North East Electric Co....129
Westinghouse Electric & Manufacturing Co. 100

Steel Castings
Clark Equipment Co.....Inside Front Cover

Steel Products
Motor Wheel Corporation.Inside Back Cover

Steering Gears
Lavine Gear Co....172
Ross Gear & Tool Co.... 73

Steering Knuckles
Union Switch & Signal Co....171

Tanks (Air, Gasoline & Oil)
A. B. & B. Sheet Metal Works....183
Columbian Steel Tank Co....177
Heil Co. 99
York Corrugating Co....174

Tanks (Glass Lined)
Pfaudler, The, Co....105

Tanks (Milk)
Pfaudler, The, Co....105

Tires
Ajax Rubber Co., Inc....191
Federal Rubber Co....114
General Tire & Rubber Co....116
Goodrich, B. F. Rubber Co....104
Kelly-Springfield Tire Co....161
Republic Rubber Co....140
Thermoid Rubber Co....119, 120, 157
United State Rubber Co....154

Tire Carriers
Petry, N. A., Co., Inc....168

Tops
Weatherproof Body Corporation....171

Top Materials
Pantasote Co. 113

Trailers
Fruehauf Trailer Co....178

Trailers (Milk)
Pfaudler, The, Co....105

Transmissions
Ahlberg, K. E., Co....167
Brown-Lipe Gear Co....139
Cotta Gear Co....185
Fuller & Sons Mfg. Co....61, 164
Warford Corporation 144

Universal Joints
Blood-Brothers Machine Co....184
Snead & Co....180
Thermoid Rubber Co....119, 120, 157

Valves
Ideal Equipment Co.... 49
Petry N. A., Co., Inc....168

Valve Caps
Schrader's, A. Son, Inc....29, 112

Valve Grinders
Albertson & Co....127
Peterson, A. H., Mfg. Co.... 80

Valve Insides
Schrader's, A. Son, Inc....29, 112

Valve Reseating & Refacing Tools
Albertson & Co....127

Valve Seat Reamers
Albertson & Co....127

Ventilators
Petry, N. A., Co., Inc....168

Warning Signals
Buell Manufacturing Co....190

Wheels
Bethlehem Steel Co.... 71
Clark Equipment Co....Inside Front Cover
Dayton Steel Foundry Co....106
Hoopes, Bro. & Darlington, Inc.... 98
Interstate Foundry Co., The.... 3
Motor Wheel Corporation.Inside Back Cover

Winches, Truck
Mead-Morrison Manufacturing Co....136

Windshield Cleaners
Berkshire Products Corp.... 49

BUELL SAVES DELAY

Traffic tie-ups are costly. Delay runs up operation expense. Let Buell open the way.

BUELL equipped trucks demand the right of way. The compelling melodious whistle is not to be ignored—that is why the United States mail trucks are BUELL equipped; they HAVE to make time in heavy traffic.

Equip your trucks with a BUELL traffic breaker. If your dealer cannot supply you write to us direct.

BUELL SIGNALS WARN EVERY TIME

BUELL MANUFACTURING COMPANY
Cottage Grove Avenue at 30th St., Chicago, Ill.

Sell RADIO During the Winter. Watch for Our Announcement

Factor Number 5—

Cutting Off Stock and Machining

TO assure uniformity in ball-bearings successive operations must bear exact relation to each other. Precise co-ordination in this particular is attained at the STROM plant by automatic machines which cut, bore, face, and ream—without removal of the bar from its chuck. One more small cut, beveling the edge, and the ring is ready for the hardening room. This is another reason why STROM guaranteed ball-bearings, for new or replacement work, put winged feet on Power—

"Wherever a Shaft Turns"

U. S. Ball Bearing Mfg. Co.

(1979)

AJAX

PNEUMATIC TRUCK CORD TIRES

SERVICE and economy in a pneumatic truck tire are dependent upon the enduring qualities built into it. To insure a full measure of endurance, there must be proper balance in materials, construction and design.

Achievement of proper balance in AJAX Cord Tires for motor bus and truck service has been accomplished through long experience and scientific observation of the severest kind of tests.

Motor bus and truck owners are invited to correspond with us on their problems relating to pneumatic cord tires. Make use of this service, without obligation.

AJAX RUBBER COMPANY, Inc.
220 W. 57th Street New York City

Branches in principal cities

NEW FEATURES IN CONSTRUCTION AND DESIGN

THIS SYMBOL IN ANY ADVERTISEMENT MEANS SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Advertisers' Index

A

A. B. & B. Sheet Metal Works...183
Acme Motor Truck Co..... 77
Ahlberg, K. E., Co.....167
Ajax Rubber Co., Inc.....191
Albertson & Co.....127
American Autoparts Co.....130
American-LaFrance Fire Engine Co., Inc. 145
American Malleable Castings Assn. 111
Amos Loader Co.....182
Archer Iron Works.....174
Atterbury Motor Car Co.....170
Auglaize Hoist & Body Co.....182
Autocar Co. 8

B

Babcock, H. H. Co.....185
Bearings Co. of America.....173
Bessemer Motor Truck Co.....162
Bethlehem Steel Co..... 71
Blood-Brothers Machine Co. 184
Borg & Beck Co..... 4
Bowen Products Corporation.....180
Bower Roller Bearing Co.....141
Brown-Lipe-Chapin Co. 179
Brown-Lipe Gear Co.....139
Buckeye Jack Mfg. Co.....150
Buda Co. 152
Buell Manufacturing Co.....190
Bus Body Corporation.....181
Bush Manufacturing Co.....183
Butler Automotive Steel Co.....179

C

Chilton Co. 132, 133
Clark Equipment Co., Inside Front Cover
Climax Engineering Co.....103
Columbia Axle Co.....183
Columbian Steel Tank Co.....177
Commerce Motor Truck Co.....185
Continental Motors Corporation, Back Cover
Continental Pneumatic Equip. Co...164
Cotta Gear Co. 185

D

Day-Elder Motors Corporation...178
Dayton Steel Foundry Co. 106
Denby Motor Truck Corporation 180
Detroit Steel Products Co....137, 138
Dietz, R. E., Co.....165
Distributing Opportunity 69
Dixon, Joseph, Crucible Co.....146
Duplex Truck Co.....165

E

Eaton Axle & Spring Co.....158
Eaton Axle & Spring Co., Cox Bumper Division 135
Eaton Axle & Spring Co., Perfection Spring Division..... 97
Eclipse Machine Co. 168
Eisemann Magneto Corporation...170

F

Federal Bearings Co., Inc.....181
Federal Motor Truck Co..... 54
Federal Rubber Co.....114
Fruehauf Trailer Co.....178
Fuller & Sons Mfg. Co.....164

G

Galion Allsteel Body Co. 166
Garford Motor Truck Co.....151
General Motors Truck Co.....155
General Tire & Rubber Co.....116
General Woodwork Corporation..163
Gilliam Manufacturing Co.....180
Gill Manufacturing Co.....126
Goodrich B. F., Rubber Co.....104
Graham Brothers 159
Gramm-Bernstein Motor Truck Co.189
Gurney Ball Bearing Co.....183

H

Hale-Kilburn Co. 122, 123
Handy Governor Corporation....176
Heil Co. 99
Hess-Bright Manufacturing Co... 6
Heywood-Wakefield Co. 174
Highland Body Manufacturing Co.181
Hoopes, Bro. & Darlington, Inc... 98
Huck Axle Corporation.....184
Hyatt Roller Bearing Co.....107
Hydraulic Hoist Mfg. Co.....160

I

International Harvester Co. of America, Incorporated 5
Interstate, The, Foundry Co. 3

J

Johns-Manville, Inc. ...81, 82, 83, 84

K

Kelly-Springfield Tire Co.....161
Keratol Co. 153
Kissel Motor Car Co.....181

L

Lavine Gear Co.....172
Leece-Neville Co. 178

M

Master Motors Corporation.....177
Mather Spring Co.....156
Mead-Morrison Manufacturing Co.136
Metropolitan Body Co.....169
Monarch Governor Co.....173
Motors Metal Mfg. Co.....172
Motor Wheel Corporation, Inside Back Cover

N

Norma Co. of America.....169, 179
North East Electric Co.....129

O

Oakley Chemical Co.....175

P

Packard Electric Co..... 2
Pantasote Co. 113
Parish Mfg. Corp... 147
Park Drop Forge Co.....176
Petry N. A. Co., Inc.....168
Pfaudler, The, Co.....105
Pierce-Arrow Motor Car Co.....193
Piston Ring Co.....187
Prest-O-Lite, The, Inc.....124, 125

R

Rees Manufacturing Co.....174
Republic Motor Truck Co., Inc. 108, 109
Republic Rubber Co.....140
Rock Manufacturing Co.....178
Ross Gear & Tool Co..... 73
Rowe Motor Manufacturing Co...179
Russel Motor Axle Co..... 75

Advertisers' Index—Continued

S

Salisbury Axle Co.....147
Saving Spring Co.....176
Schacht, G. A. Motor Truck Co...115
Schrader's, A. Sons, Inc.....112
Selden Truck Corporation.....117
Service Motors, Incorporated..... 96
Sheet Steel Products Co.....193
Sheldon Axle & Spring Co.....147
Shuler Axle Co., Incorporated..... 94
Signal Motor Truck Co. 79
Smith, A. O., Corporation.....184
Snead & Co.....180
Spicer Mfg. Corporation.....147
Splitdorf Electrical Co.....121
Spring Perch Co. 7
Standard Motor Truck Co...101, 102
Staynew Filter Corporation.....177
Stewart Iron Works Co.....176
Stewart Motor Corporation, Front Cover
Stewart - Warner Speedometer Corp. 185
Stromberg Motor Devices Co.....131
Super-Traction Co. 166

T

Teagle, The Co..... 95
Thermoid Rubber Co.....119, 120, 157
Timken-Detroit Axle Co.....118
Toppins Tractor Truck Co.....182
Triangle Motor Truck Co.....167
Transport Truck Co.....173

U

U. S. Ball Bearing Mfg. Co. 190
Union Motor Truck Co..... 93
Union Switch & Signal Co. 171
United Motors Products Co.....149
United States Rubber Co.....154

V

Van Dorn Iron Works Co.....110
Veeder Mfg. Co.....175

W

Walker Vehicle Co.....142
Ward Motor Vehicle Co.....194
Warford Corporation 144
Waukesha Motor Co.....134
Weatherproof Body Corporation..171
Westinghouse Electric & Manufacturing Co. 100, 143
White, The, Co.....184
Wisconsin Motor Mfg. Co.....177
Wood Hydraulic Hoist & Body Co. 128
Wyman-Gordon Co. 182

Y

York Corrugating Co.....174

Z

Zenith-Detroit Corporation 148

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